

**RAILWAY  
ACCIDENTS  
IN  
1958**

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VOL. LXXXII No. 2115



"THE TIMES" OF THE TRANSPORT WORLD

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LONDON, NOVEMBER 28, 1959

**CANBERRA  
UNDER  
CONSTRUCTION  
IN BELFAST**

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PRICE NINEPENCE

**A Notable Railway Engineer**

FEW railway engineers have had a career quite like that of Mr. V. A. M. Robertson, C.B.E., M.C., who this month has completed 50 years' work on the railways of this country. During the period 1909-12, while he was articled to a consulting engineer to the London and North Western Railway, he was engaged on Parliamentary surveys between Euston and Watford for electrification and on studies for new railways in Birmingham, Manchester and Leeds and for the proposed widening of the single line from Hooton to Heswall. This work included two underground railway projects which did not materialise—the proposed loop in 13-ft. tunnel under Euston and the investigation of the possibility of a city railway in Birmingham. While with the South Eastern and Chatham Railway he was responsible for the civil engineering works on some of the Kent coast station reconstructions carried out before the 1914-18 war and for preparation of special drawings of the railway river bridges, owned by that company, for the War Office. On the Stratford district of the Great Eastern Railway and later the London and North Eastern Railway he was responsible for the design and execution mainly by direct labour of the civil engineering works in connection with the intensive suburban steam service on the G.E. Railway from Liverpool Street as the alternative to electrification and, as district engineer, for a large programme of bridge renewals between 1921 and 1928. His experience enabled him to undertake the onerous duties of civil engineer to the Underground Railways, to which position he was appointed in 1928 and which he held until December, 1937, on his appointment as chief engineer (civil) when he assumed responsibility for the vast London Transport £45 million new works programme.

**Varied Experience**

IN 1940, on the retirement of Mr. Frank Pick, Mr. Robertson was appointed engineer-in-chief of London Transport, controlling the five engineering departments. He held this position until November, 1943, when the position was abolished and he became chief civil engineer of the Southern Railway and subsequently of the Southern Region of British Railways. During the 1939-45 war both with London Transport and on the Southern Railway he carried the responsibility of restoring war damage caused by high-level bombing and flying bombs, and it is interesting to record that the delays to railway traffic arising from the vast amount of damage seldom caused more than temporary inconvenience. In March, 1951, Mr. Robertson retired from the railway service and joined the well-known partnership of Sir William Halcrow and Partners, since when he has, in addition to many other civil engineering works, been engaged on railway projects all over the world, the most important schemes being connected with proposed underground railways in Auckland (New Zealand), Caracas (Venezuela) and Glasgow, a proposed new railway from Southern Rhodesia to the West Coast of Africa, and the restituting of the Kowloon terminus of the Kowloon-Canton Railway in Hong Kong Territory. In recent years, under his direction, Sir William Halcrow and Partners has been assisting the B.T.C. in connection with the railway modernisation programme. The most notable works which have been constructed to his design have been at Ripple Lane new railhead depot and marshalling yard, the new Peterborough goods depot and Cambridge diesel maintenance depot on the Eastern Region, Walworth Road coal depot (described in our October 17 issue) and the Cheriton-Folkestone widening recently started on the Southern Region, together with bridge works in Birmingham and the design of the Crewe district electric depot for the L.M. Region. In May, 1959, Mr. V. A. M. Robertson resigned from the partnership; he is now, at the age of 69, consultant to Sir William Halcrow and Partners. He is still engaged on railway work on behalf of the firm. In 50 years, therefore, he has crowded an active, busy and responsible life which is the privilege of few and the probable ambition of

many young civil engineers when they join the railway service. During this time he has accepted many other activities of an onerous nature in connection with many engineering institutions, learned societies and the Army, and it is fitting that his profession as a civil engineer should have given him the highest honour which it has to bestow in electing him president of the Institution of Civil Engineers for the year 1949-50.

**Shipbuilding Wage Claim Rejected**

IN view of the unfavourable outlook facing the industry, the employers had no alternative but to reject the claims of the Confederation of Shipbuilding and Engineering Unions for a "substantial" wage increase

expressed in a cartoon disapproval of the noise, smoke and smell emitted by the then new horseless vehicles, Lord Tedder said that his complaints of 1904 were still valid despite half a century of progress. "I don't think it would be an overstatement to say that the noise of the modern motor cycle and scooter and the stinking clouds of black smoke which choke and blind us when held up behind a heavy diesel chugging its way up hill are surely more offensive and more noxious than anything a motor of 1904 could produce." Lord Tedder went on to ask who was to blame—the designer, the maintenance engineer or both. He felt it was a question that urgently called for an answer and a remedy. "It seems a crazy situation," he said, "which sees us, for every step forward in clearing the

evening papers full of pictures of standing traffic would want to hear more about it. By Monday of this week, at the annual banquet of the City Livery Club, the Lord Mayor had recovered his confidence and referred again to the grave state of our roads in Britain and the inefficiency of our programme of dealing with the problem. It was slowing down our export trade, losing us export markets and costing an estimated £500 million a year. "When the Lord Mayor attempts," he continued, "to have a night's sleep at his Hampshire home, he knows that on the morrow he must face the long and dreary journey back to London on one of the oldest, most dangerous and worst roads in Europe: the A30, where conditions slow traffic to a snail's pace." The shocking indignity of the Sunningdale level crossing was followed by the agony of Staines Bridge, the Chiswick "slowerover" and the Cromwell Road "traffic suspension." Germany was spending about £500 million on roads this year or about what we paid in motor taxation, whereas we were spending £147 million, including maintenance and repairs. In terms of national income our road spending lagged far behind the rest of Western Europe. We needed a new road programme in Britain of at least £200 million a year and urban road development as distinct from country motorways to avoid paralysis.

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and a 40-hour week in place of the present week of 44 hours. They promised, however, to discuss the possibility of a shorter week as soon as they had concrete evidence that the unions would co-operate in the introduction of new techniques and in avoiding loss of working time, unnecessary manning of machines and restrictions on output. The retort of the Confederation's chairman that the unions were not unco-operative is hardly borne out by the many demarcation and other disputes which have resulted in so much work being lost to British yards in recent years. Prices must indeed be reduced to stop the diversion of orders to western Europe and Japan. Meanwhile there are more ships afloat than are needed for the present volume of world trade; according to Mr. G. H. R. Towers, president of the Shipbuilding Employers' Federation, world shipbuilding capacity is far in excess of any probable demands. In fact, new orders in the United Kingdom in the 12 months up to September 30 amounted to only 185,000 tons gross and none came from foreign shipowners; in the same period cancellations amounted to 234,230 tons. Further orders since September have been more than offset by further cancellations. Some yards already have vacant berths because of lack of orders and others are working on their last contracts. Men are being paid off through shortage of work and others must follow if further orders are not obtained quickly; unemployment is also increasing among ship repair workers. Surely these are danger signs which justify a fresh look at the industry jointly by management and men.

**Lord Tedder on Diesel Smoke . . .**

REPLYING for the guests at the annual dinner of the Institute of Road Transport Engineers in London recently, Lord Tedder, chairman, Standard Motor Co., Limited, who was principal guest, had some trenchant remarks to make on diesel smoke and other current problems of road transport. Recalling that as a boy in 1904 he had

air of coal dust and smog, sliding back toward asphyxiation from exhaust fumes." One could not help wondering, he went on, whether ease of maintenance had not been regarded rather as a by-product of good general design, instead of being—as it should be—one of the key objects of design.

**. . . And on Road-Rail Relationship**

ANOTHER point raised by Lord Tedder "with the diffidence proper when one lacks practical knowledge" was the relationship between road and rail transport. He thought it was true to say that at present road and rail, instead of being complementary, were very largely competitive. In many respects competition could be healthy, but if carried too far it could be thoroughly uneconomic and he wondered whether a marriage of thought between road and rail transport might not result in reducing and simplifying the handling which was such a large element in costs. Lord Tedder also referred to the operation of traffic on the new M1 motorway and thought it was disturbing that of the four serious accidents that had occurred during the first five days, three involved commercial vehicles. Although it was far too early yet to draw any lessons from M1, he thought conditions for driving on motorways might well call not only for new standards of driving but also for new standards of safety from the design point of view.

**The Lord Mayor and Roads**

SPEAKING at the Livery dinner of the Coopers' Company on Thursday of last week, a day when the chaos of London traffic had been worse confounded by water-main bursts, the Lord Mayor of London, Sir Edmund Stockdale, said he had two themes of public importance for his inauguration banquet—relations of the public to the police force and the congestion of city traffic. The Home Secretary had taken the wind out of his sails regarding the police by announcing the proposed inquiry and he supposed that none of his hearers who had seen the

**Underground Fire Repercussions**

TO control an underground fire below the railway embankment north of Sheepbridge, near Chesterfield, the Eastern Region district engineer is having possession of all running lines between Unstone Colliery Sidings and Tapton Junction for eight days, from midnight on November 21 to midnight on November 29. Train services are curtailed as a result and the remainder diverted, mainly via Holmes, Woodhouse Mill, Eckington and Barrow Hill. The majority of Midland north-and-south main-line trains follow that route and call at Rotherham Masborough, whence connecting diesel trains run to Sheffield Midland. The connections start earlier than the normal through trains. Services originating or terminating at Sheffield Midland continue to run to and from that station via the diversion, taking up to 15 min. extra to Chesterfield. Sheffield—Nottingham diesels are much curtailed, especially north of Chesterfield, and Chesterfield—Sheepbridge—Dronfield buses now connect with the truncated local services. Services from York and beyond to Birmingham and Bristol work via Dearne Junction, Rotherham Central, Sheffield Victoria (connecting buses to Sheffield Midland) and thence via Beighton Junction to Chesterfield Midland and vice versa.

**Paris Market Packaging Centre**

IN view of the projected legislation regarding Covent Garden Market in London (see MODERN TRANSPORT of November 14), progress being made in a similar sphere in Paris is of interest. A packaging centre to serve the Paris markets, constructed at an overall cost of 600 million francs by a company with a capital of 150 million francs, subscribed jointly by the City of Paris, wholesalers, package manufacturers and road transport undertakings (including the S.N.C.F. subsidiary S.C.E.T.A.), is to open on December 1. It is located near the Quai d'Ivry between Rue Jean-Baptiste-Berlier and Rue Brunnesseau, with rail and road access, and is responsible for the collection, sorting and dispatch of all empty packages. Fourteen collecting stations have been set up around the outside of the markets—a fifteenth will be established later—empties being conveyed from these stations to the centre on light semi-trailers. At the centre they are sorted to areas and owners and dispatched by road or rail; damaged packages may be destroyed or repaired. In future, empty packages will not be dealt with in the market itself, but will be deposited in bulk at collecting stations—opened daily from 1 a.m. to 6 a.m.—or at the centre. The packaging centre covers an area of nearly 36,000 sq. yd., more than half of which is under cover.

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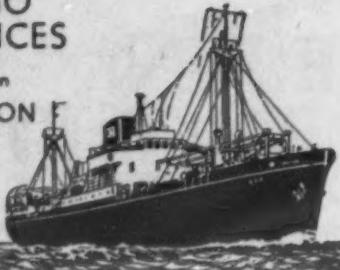
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*The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.*

### Railway Accidents in 1958

THERE was a marked decrease during 1958 in accidents to railway employees; the figures are the lowest recorded since full reporting was resumed after the war, and the percentage reduction is far greater than might be expected from the decrease in staff, a figure which fell by 4 per cent to 572,860 during the year. This result, states Brigadier C. A. Langley, Chief Inspecting Officer of Railways, in his report for 1958\* is due primarily to the staff's having become more safety-conscious as a result of united efforts by the British Transport Commission and the trades unions to impress the value of accident prevention; also a study group, formed in 1955, has done much to publicise safety measures. He feels, however, that there is no room for complacency because most of the accidents were the result of individual carelessness. The Commission, again with full union co-operation, is undertaking another special investigation, this time into the subject of accidents caused by drivers passing signals at danger, a class which has accounted for a large proportion of the fatalities in recent years. The number of train accidents fell slightly to 1,186 compared with 1,205 in 1957 and with an average of 1,195 over the last 10 years. Casualties under this head rose to 1,205 (36 killed, 1,169 injured) compared with 1,074 (112 killed, 962 injured) in 1957 and the 1951-55 average of 940 (62 killed, 878 injured). Two collisions, one at Dagenham and the other at Eastbourne, accounted for 15 killed and 133 injured, and 217 persons were injured in four buffer-stop collisions, in which injuries were mainly slight.

### Need for Vigilance

ON the other hand, total fatalities in "all movement by rail," i.e. train and movement accidents, showed a gratifying reduction to 206 (0.5 per million train-miles) compared with 320 for 1957 and the average of 295 for 1951-55; movement accident fatalities were 170 compared with 208 in 1957. Several movement accidents were the outcome of misadventure on the part of staff and a few were attributable to defects in equipment or materials or in methods of working, but many were due to lack of individual care, a failing which is difficult to counteract. Opportunities are taken at inquiries to impress upon the staff

\* Accidents which occurred on the Railways of Great Britain, 1958—London, H.M. Stationery Office, 4s. net.

### NEWS SUMMARY

SIR LEONARD LORD, chairman of the British Motor Corporation, this week announced a new expansion programme in which it is planned to spend £49 million during the next two to three years. As well as a general expansion of production from the present 750,000 to one million vehicles a year, the plans include the introduction of a new range of light commercial vehicles next January.

Mr. Maurice Holmes will become chairman of the Tilling Group Management Board in place of Mr. Stanley Kennedy, who is retiring on March 31, 1960, states the B.T.C.

Leyland Motors, Limited, is to start work on the design of a new range of commercial vehicle chassis specifically for operation in Africa following an intensive study of conditions in that territory.

the necessity for constant vigilance and the report suggests that every means should be taken to publish to the staff as widely as possible information regarding the circumstances of accidents; supervisors should remember that it is their duty at all times to set a proper example and to correct their men should they observe them making mistakes, giving them advice based on their own wider experience. Accidents caused by the errors of train crews rose slightly to 315, a figure 22 per cent higher than the 1951-55 average of 262. The report records an increase (51 compared with 35 in 1957) in accidents resulting from passing signals at danger, although it was still less than the 1951-55 average of 59; six of this type of accident might have been prevented by the automatic warning system.

### Automatic Warning System

THE Chief Inspecting Officer refers to the safety system, known hitherto as automatic train control, whereby an audible indication of the aspect of the distant signal is given to the driver in the engine cab. If the warning sound is not acknowledged by his operating a cancelling device the brakes are automatically applied with sufficient power to stop the train from high speed, even with the regulator fully open. "The term 'automatic train control' has," he says, "led many people to think it is a device for controlling automatically the movement of trains, thereby virtually eliminating accidents. This is not the case, but the system is a valuable aid to drivers in the observance of signals, especially in bad weather . . . I propose, therefore, to refer to the system in future as the automatic warning system (A.W.S.) of train control." Steady progress is reported with the installation of the new British Railways warning system. By the end of 1959 2,000 locomotives and 530 route miles will have been equipped, apart from the Western Region main line, which brings the total route mileage covered to 2,000. Failures of traffic and other staff resulted in 161 accidents (177 in 1957), but of these only 53 were collisions or derailments, showing a marked decrease from the 1957 figure of 76 and the 1951-55 average of 62. There were, however, several failures by signal engineers' linemen which led to accidents that might have had serious results: instances of these are given.

### Modern Signalling Intricacies

RAPID strides are reported with the extension of electrically-operated colour light signals and power-operated points combined with track circuiting whereby train operation is speeded and further aids are given to drivers in the observance of signals and to signalmen in carrying out their responsible work. It is pointed out that this modern equipment incorporates a complexity of automatic and semi-automatic electrical devices and makes the task of the railway signal engineer even more onerous than in the past, calling for meticulous care in the installation, repair and testing of the electric controls, circuits and apparatus. States the report: "It is satisfactory to record that particular attention has been paid to this and that prompt action is taken to deal with any cases where staff fail to comply with the safety regulations and to live up to the high standards set to them by this branch of the railway profession." Summarising the position the report shows that total accidents due to failure of the human element and technical defects rose to 766, or 65 per cent of the total of 1,186 train accidents in the year, a slight increase over 1957. Accidents at public level crossings emphasised the problem of maintaining safety on account of manning difficulties; these may ultimately be overcome by recent powers authorising the B.T.C. to replace manned gates either by half barriers worked automatically by the trains or by full-length barriers operated from near the crossing or remotely from a signal-box. The future programme will depend upon the result of experiments with a number of automatic half barriers which are to be installed over the next two years. Like its predecessors this report abounds in worthwhile statistics and contains an enlightening summary of the year's accidents and the lessons to be drawn from them.

The Duke of Edinburgh visited Smiths Centre, introduced by the S. Smith and Sons group for information purposes, on November 19. See page 14.

The Shipbuilding Employers' Federation has rejected claims for increased wages and shorter hours by the Confederation of Shipbuilding and Engineering Unions; declining business is one of the grounds.

B.O.A.C. is offering two of its 10 Douglas DC7C aircraft for sale at \$1 million each. It expects that all of them will be surplus to its needs by next autumn. The fleet when new cost, with spares, about \$36.4 million some three years ago.

In his speech to the annual general meeting of the Fairley Co., Limited, the chairman, Mr. G. W. Hall, complained of the slowness of the Government to back the development of the Rotodyne vertical take-off air liner. A development contract was near, but two years had been lost.



THE new 45,000-ton P. and O. passenger liner, *Canberra*, which is being built in the Belfast yard of Harland and Wolff, Limited, is, as was indicated editorially in MODERN TRANSPORT of November 21, due to be launched on March 1, 1960, by Dame Pattie Menzies, G.B.E., wife of the Australian Prime Minister. She is scheduled to make her maiden voyage early in 1961 and is destined for the United Kingdom—Australia run for the P. and O. Steam Navigation Company and also for the transpacific, Australian—west coast of North America, and possibly west coast—Japan and Hong Kong routes on the service of the newly formed Orient and Pacific Lines.

Having reached a decision on the broadest aspect of the ship's duty it was necessary to build up the design on the three basic facts, passenger complement, cargo capacity and speed. The first had, necessarily, the biggest influence on the design and layout of this ship. It was decided that the maximum number of passengers should be 2,250 and that there should be considerably more tourist-class passengers than first. After further study the most suitable proportions were decided to be

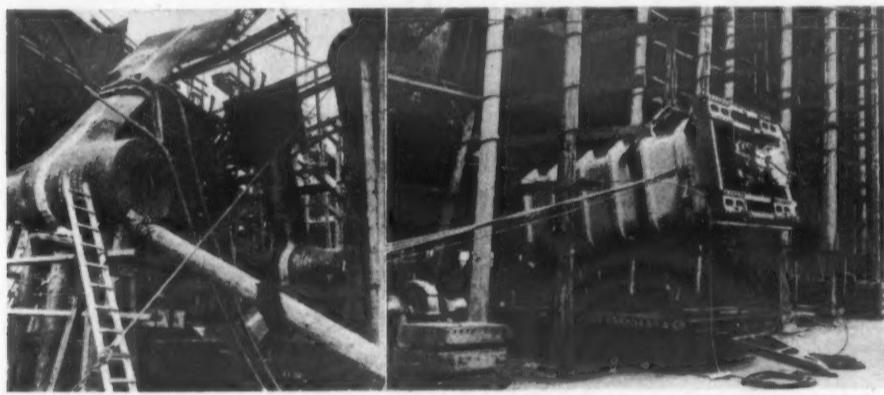
motor room. The positioning of each of these units was adjusted to make full benefit of space available and tank top width.

Having placed the bulk of the passenger accommodation in the middle of the ship, it was obviously necessary to find space for crew, cargo, stores, etc., outside this region. The crew was given cabin space on the higher decks forward of the passengers, while below it was space for cargo holds. The officers' accommodation and bridge were placed above the passenger block, while galleys, stores and fuel were accommodated below the passenger spaces. It was realised that by using aluminium for the superstructure of *Canberra* another deck could be incorporated and many more passengers accommodated. The additional accommodation completely offset the additional cost of this more expensive material. It was finally decided that she should have a fully welded aluminium superstructure and, in fact, the British Aluminium Co., Limited, is supplying more than 1,000 tons of this material.

#### Hull Form

With a ship of this great size it was felt that the lifeboats should be situated lower down, nearer to the water line. This would help reduce top-weight, improve open deck space and reduce the distance that the boats have to be lowered in case of emergency. A change in planning became necessary, for it was thought that the boats should be stowed within the breadth of the ship, and adequate space should be provided for mustering passengers and crew for lifeboat embarkation. Some of the public rooms were placed on this lower deck to provide these requirements.

Many models were tested, various shapes and modifications made, before the final hull shape was forthcoming. There was little basic data for high-speed ships having a speed-to-length ratio of unity, so it was necessary to amass this data by performing many experiments. Many other investigations were carried out. One idea was to fit a twin skeg stern, another was the fitting of a ram-bulb bow



The 82-ton A bracket castings which will support the propeller shafts are seen in position; right, the hydraulic machinery for the port forward Denny-Brown stabiliser being shipped through the side of the vessel

600 first class and 1,650 tourist class, capable of being converted into 550 first class and 1,750 tourist; the conversion means transforming 50 first-class passenger berths into 100 tourist berths. It was settled that all first-class cabins should have private baths or showers and toilets, while a proportion of the cabins for tourist passengers would also have private facilities. It was agreed there would be two sittings in each dining-room.

#### Estimating Size of Crew

It was then possible to assess approximately the number of officers and crew required to man the ship. The total number of crew estimated was about 1,000. It was also decided that the whole of the accommodation, passenger and crew, would be fully air conditioned. Making an allowance for main and auxiliary machinery, a rough design was prepared so that approximate dimensions could be obtained. They were as follows with subsequent modifications shown in brackets: Length b.p. 740 ft., beam mld. 100 ft. (102 ft.), draft mld. 32 ft. (32 ft. 6 in.), gross tonnage 40-45,000 (45,000) and s.h.p. 80,000 (85,000).

There were obvious advantages in preparing a design with engines aft, and they included: increased space for passenger accommodation; less weight through the reduction in length of shafting and machinery casings; less interruption to passenger public rooms from light and air trunks and casings; the main source of noise and heat being moved to the after end of the ship; the comfortable central portion of the ship available for improved accommodation.

#### Turbo-Electric Drive

In view of these advantages, it was determined to accommodate machinery and boilers at the after end of the ship, but before the design could be finally settled, it was necessary to select the type of machinery and fix the service speed and power. After considerable experimenting it was decided that the required shaft horsepower would be 85,000, and this would give an adequate margin of speed. In view of this, there were only two choices for the propulsion unit, either geared turbines or turbo-electric drive. There were points in favour of each, but in the final summing up, despite the penalties of extra weight, size and cost, turbo-electric machinery was considered to be the right choice for the ship. It has the advantages of flexibility, manoeuvrability and there is less likelihood of mechanical failures. Another vital benefit was that similar turbines working at similar temperatures and pressures had already been manufactured and were in service on land.

As far as the layout of the ship was concerned the B.T.H. turbo-electric installation suited the arrangement quite well. The motors were placed well aft in a separate compartment, fitting in with both the hull shape and the line of propeller shaft. The boilers were conveniently housed on a flat above the propeller shafts and the turbine machinery compartments placed forward of the

and a third was to employ novel designs of appendages, such as open shaft brackets as opposed to bossings. Eventually the skeg stern was rejected and the large bulbous bow accepted. Exposed or naked shafts, supported by specially designed and angled A brackets, were also favoured. These, together with a very good form, showed that if 85,000 h.p. were put into the ship there would be an adequate margin of speed to cope with delays due to bad weather, fog and the like.

#### Propeller Design

The work on propeller design has been as extensive as that for hull design. Here again, investigations covered a wide field and in addition to self-propulsion tests a lot of work was done in cavitation tunnels and an equal amount of labour on paper. Special alloy four-bladed twin-screw propellers have now been ordered for the ship and there is every confidence in their design that not only will they give the performance which is expected of them, but that they will not in any way induce hull or shaft vibrations.

In two of the cargo holds it seemed both impractical and undesirable to have an orthodox cargo



Forward end of the promenade deck showing the aluminium superstructure; right, welding shell plating to one of the A brackets

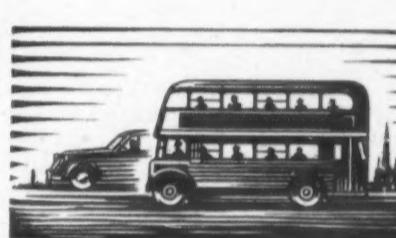
trunk passing up through all the accommodation and surmounted with derricks and winches. A side-loading device was designed, in conjunction with an American company which had already investigated certain aspects of side loading. The equipment will be undergoing its full-scale test in a few weeks and already appears to be very successful. This Carron cargo transporter raises the cargo or cars on a pallet through a central trunk to a convenient height and then traverses it across the ship, through the shell doors to a point over the quay and then lowers it on the quay.

To handle baggage for 2,250 people all having voyaged several weeks has proved to be one of the hardest problems to solve. Once again, with the assistance of J. Collis and Sons, Limited, an elaborate system of conveyors and elevators has been developed and should now meet every need. The elevator will be of a selective type and will deposit baggage at any preselected deck.



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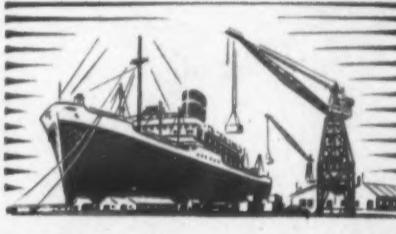
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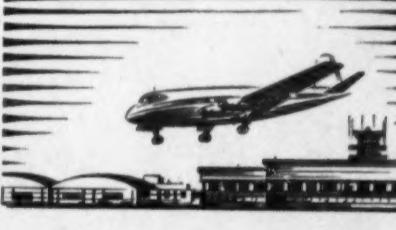
## RAIL

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## SEA

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**AN INVESTMENT IN PEACE OF MIND**

## LORRY-BUS-COACH

### Mexborough and Swinton Trolleybuses

THE Mexborough and Swinton Traction Co., Limited, is shortly to deposit before Parliament a Bill to authorise the discontinuance of its trolleybus undertaking, of which some services are run jointly with Rotherham Corporation Transport Department. Single-deck trolleybuses have been a feature of the local scene since August, 1915, and in 1928-29 the tramcar service from Rotherham to Mexborough was replaced by trolleybuses. The present system is being abandoned in favour of diesel buses, subject to statute, possibly in 1961. The company considers that the requirements for road passenger transport within the districts it at present serves with trolleybuses would be met more efficiently and more economically by services co-ordinated with other services of public service vehicles operated by the company and its joint operators, the Rotherham Corporation and the Yorkshire Traction Co., Limited. The form of bus to be used in the conversion is being considered. The closure of this system will mark the end of trolleybus operation by companies in Great Britain.

#### Demand for T.R.T.A. Survey Report

THERE is a brisk demand for copies of the report of the survey of C-licensed vehicles made by the Traders' Road Transport Association. Many of those seeking copies are trade associations and one such organisation ordered 2,500 copies.

#### Minister Brought into Standing Dispute

LATEST move in the current dispute over standing passengers in high-capacity double-deck buses is that both sides on the N.J.I.C., which represents municipal managements and workers, have asked for a meeting with the Minister of Transport. This was after they had failed to reach agreement on how to revise the national agreement which has been repudiated by the unions. They seek an interpretation from the Minister of the present regulations governing standing passengers.

#### Federation Breaks Silence over Coventry

WHAT it claims are misleading newspaper reports on the Coventry Corporation affair has driven the Federation of Municipal Passenger Transport Employers to make a statement. The issue at stake, it says, is non-adherence to decisions of the National Joint Industrial Council—not the Federation alone—and as an employers' organisation it expects all its members to adhere to N.J.I.C. decisions and agreements equally with the trade unions with whom it makes the agreements. The merits or demerits of safe-driving awards do not enter into the matter. As recently as September, the statement recalls, Councillor W. Spencer (chairman of the Coventry Transport Committee) took the opportunity of addressing the employers on the subject, the outcome of which was an overwhelming majority decision that the Coventry Corporation action in making these payments in contravention of a decision of the N.J.I.C. was a deliberate contravention of the Federation

by-laws and as such was incompatible with membership of the Federation. The fact that similar payments have existed in other undertakings for many years and the reasons for the apparent difference in attitude are irrelevant to the decision taken by the Federation and giving emphasis to them is to draw the proverbial "red-herring."

#### Trunk Service Licensing Issue

INCREASE in traffic from Birmingham, to the extent of £28,000, following the opening of a new depot there by Leonard Green (Haulage) Limited, was gained by a switch of vehicles from

Edinburgh; and by Ribble, W. C. Standwick, Limited, and Scout Motor Services, Limited, for a new express service between Keswick and London, using the M1 motorway.

For Ribble, Mr. F. D. Walker said an undertaking had been given to British Railways limiting the use of double-deck vehicles on the services affected. Seeking also, in respect of the Leyland Atlantean front-entrance type coach, permission to dispense with conductors, he said that although the regulations stated that where a vehicle of more than 20-seat capacity was used on a stage service, a conductor should be carried, there was to his knowledge no regulation or court decision which laid down that a person acting as a conductor on a vehicle must necessarily be a person other than the driver of it. He submitted that provided the driver was duly authorised by law to act as a conductor and held a licence for that purpose, and also that the Commissioners were satisfied that the person acting as driver of a vehicle could, having regard to the nature of the service and the vehicle

A-licences involving 47 vehicles. The licensing authority (Mr. D. I. R. Muir) had called Bristow before him on August 6 under section 13 of the Road and Rail Traffic Act, 1933, to show cause why penalties should not be imposed after, it was alleged, the company had made false declarations concerning the unladen weights of 17 vehicles substituted on the six licences. The Tribunal has dismissed the appeal; its reasons are to be given in writing.

In his decision Mr. Muir, referring to 16 G.V.6 and G.V.6(SP) application forms in which the unladen weights of the substituted vehicles were not entered by the applicant and which, it was admitted, were probably entered by a clerk in the L.A.'s office, said there was no doubt that the entries were made by someone who was an agent of the applicant to his advantage and that they were procured to be made by the applicant. In all, vehicles of an original unladen weight of 52½ tons had been replaced by a like number of an actual unladen weight of 100½ tons. In one instance a 1 ton 5 cwt. vehicle had been replaced by one of 4 tons 17 cwt. The unauthorised 48 tons was equivalent to six maximum capacity vehicles and he could find no reason for leniency. Mr. Durand submitted that in the circumstances C. Bristow did not make any false statements.

The Tribunal president, Sir Hubert Hull, said that if the impeached statements were made at the instigation of the applicant the person responsible for them was his agent. He invited Mr. Durand to consider the benefit accruing to the appellant, who must have known of it. Mr. Durand suggested that this benefit was not planned. Of the penalty which ought to be invoked if the appeal went against his clients, counsel said it was unfair that all 47 vehicles should have been revoked without distinction between "tainted" and "untainted" vehicles. It was just chance that there should be so many vehicles on these particular licences. Sir Hubert observed that some of the licences would by now normally have expired—revocation meant that the application would suffer nothing. Mr. J. R. C. Samuel-Gibson, also appearing for the applicant, suggested that there should be removal of only such vehicles as would serve justice.

#### Disc Brakes on Liverpool Bus

ONE of a batch of Liverpool Transport A.E.C. Regent III double-deck buses has been fitted with Dunlop disc brakes to the front wheels by the experimental department of A.E.C., Limited. The vehicle was new in 1950.

#### Bus and Coach Developments

P. Phillipson and Son, Goldthorpe, applies for colliers' services to Barnsley Colliery by H. Oscroft. I. Murray (Bell's Coaches), Longholt, applies for licences of the late Joseph Bell.

Alexander and Sons, Limited, seeks to extend its summer limited stop Glasgow-Inverness service via Navin and Forres.

Burley's Garages, Limited, Birmingham, seeks revised conditions for its Birmingham-Iffracombe express service. These would involve surrender of the Birmingham-Iffracombe service of Stockland Garage, Limited.

Preliminary tour brochure of the Western Welsh Omnibus Co., Limited, for 1960 lists 12 summer tours of from 7 to 14 days' duration, a six-day Easter tour, one six- and one seven-day tour operated in spring and autumn and four tours for special occasions such as the Derby and Blackpool illuminations.

Bere Regis and District Motor Services applies to withdraw the Saturday service between Bere Regis and Weymouth leaving at a Thursday only operation, to discontinue Sunday operation between Woolland and Blandford and to cease Tuesday and Friday working of the summer service between Dorchester and Bridport.



A Hampstead furniture remover operates this Guy Warrior with 2,000 cu. ft. 8-ft. wide body on contract in the bedding and upholstery trade between Tipton and London. The body has insulated side panels. On the right is a Thornycroft Swiftsure 6-ton van delivering hosiery from Nottingham. It has a Burtonwood tailboard lift

its Rotherham base, and additional vehicles sought to cope with this traffic should be applied for in the West Midland traffic area. Such was the contention of British Railways, when it opposed an application to add eight vehicles to the Yorkshire A-licence, heard by the Yorkshire area deputy licensing authority, Mr. J. H. Randolph, over four days at Sheffield and Leeds, last week. Mr. L. Green, replying to Mr. J. Booth, for British Railways, said that before his company opened its Birmingham depot in February, 1958, vehicles were returning from the area empty. The new depot had attracted traffic and now six contract A- and four A-licensed vehicles were stationed there. Four special A-vehicles were purchased in Yorkshire to replace the vehicles transferred. Mr. Booth suggested that this switch was responsible for the increase in traffic, which was made possible because Yorkshire vehicles were put into the Birmingham pool. The hearing was adjourned.

#### One-Man Atlantean Coaches

SITTING at Kendal on November 18, the Northern area Traffic Commissioners granted applications by Ribble Motor Services, Limited, to vary 10 express and four stage carriage backings serving Manchester, Liverpool, Blackpool, Glasgow and

in use upon it, properly discharge the responsibilities of a conductor in addition to those of a driver, then in such circumstances the requirements of the regulation were legally satisfied by the driver acting as conductor on appropriate and approved occasions. Of the new, all-the-year-round service between Keswick and London via the motorway, Mr. Walker said that at present the three joint operators were authorised travelling time of 13 hr. 55 min. Motorway operation would cut this formidable journey by 2 hr. 10 min. Reduced operation on the existing service would be limited to Saturdays and Sundays from June to September, and the present duplication allowance would be shared between the two routes.

#### Bristow Appeal Dismissed

SHOULD an applicant be visited with punishment for admittedly false statements on licence application forms when the statements in question had been entered on the form by someone in the licensing authority's office? This, said Mr. Victor Durand, Q.C., was the primary issue when he opened an appeal before the Transport Tribunal last Friday by C. Bristow, Limited, London, E.3, against the decision of the Metropolitan Licensing Authority revoking an A-licence and five special



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CPH/HB/405

# FUTURE FOR THE RAILWAY PASSENGER

## How to Compete with the Car?

By G. F. FIENNES, M.Inst.T., Line Traffic Manager,  
Great Northern, Eastern Region\*

If we do not induce people to travel by rail we shall go out of the passenger business—and probably out of business altogether; and serve us right. If we choose to fight for our passengers, let us remember that not all other railways are doing the same. The U.S. may be out of the passenger business by 1970. The French and the Russians seem to regard passenger operation as a social but uneconomic duty. The Dutch, almost alone, have gone in horse, foot and guns, and are winning the social and economic battle. They are showing that a predominantly passenger network can pay; we can take comfort from similarities between them and ourselves.

What sort of passengers we fight for, we can choose—and where and how. Remember that the terms on which road and air compete with us and the rules under which the Government allows that competition, allow us also very wide latitude in our choice of battlefield and weapons. When we choose our weapons let us study the car. "Know thine adversary," saith the prophet. And we do not know him. Remarkably little work exists on the habits of the car owner. I hope to provoke more research:

### Car Competition

One in three of every family in the country has a car, and in five years, long before our modernisation is complete, one in two will have one. Now these cars convey in passenger-miles a year twice the present carrying of the railways; in five years they will convey three times. The habit of travel is growing furiously. We are getting by rail only a tiny fraction of the extra movement and by bus none at all. Why? Because ownership of a car is one of the social revolutions of our age.

What does a car cost people compared with rail? From the tycoon with a chauffeur at 26d, a mile to the family man at 8½d, of which 2d is the out-of-pocket expenses on movement. If we are to compete in cost that is the figure with which we must compete—one halfpenny a seat-mile. Our average receipts are 2.6d. a mile first class or 1.5d. a mile second class. The new charges are 3.2d. a mile first and 2.1d. second. Our direct costs are one farthing a seat-mile for steam expresses in favourable circumstances: to which I add about one halfpenny a passenger-mile for express and 2½d. a mile for steam suburban.

### Comparative Costs

We must compete generally on the basis of the direct movement cost of the car, as it appears to the owner—2d. a car-mile, a halfpenny a seat-mile. It is only when the driver is alone in the car that railway charges are competitive. There is no headroom for a large general increase in fares except where we have overriding advantages in convenience, comfort and speed. But we have "footroom" for lowering charges selectively, if we choose, without impairing a reasonable profit, more so when diesel and electric traction have taken over and lowered our movement costs by some 30 per cent for locomotive hauled and 50 per cent for multiple unit stock.

Next, let us think about speed; the speed which the French so rightly call *vitesse commerciale*. The car has two tremendous advantages. Firstly, it has practically no terminal time. The driver opens his garage, presses the button and drives away. At the far end he stops, locks and walks a short way, except where he has to park away from his destination—and that is mainly a commuter's problem. Secondly, the driver of a car has an infinite choice of time of departure.

### Speed

Taking the average speed on the road as 15 m.p.h. in London, 20 m.p.h. in other towns, and firstly 35 m.p.h. in open country or on normal roads, and secondly 45 m.p.h. on the motorways and improved trunk roads. I have assumed that after four hours' driving the car stops for an hour for a meal. Trains such as the best main-line expresses on the best main routes may optimistically be taken as running at 55 m.p.h.; the run-of-the-mill expresses on those lines and the general expresses on other lines are about 45 m.p.h. Allowing the passenger 45 min. at the outward terminal for getting to the main-line station, booking, seating and margin for safety, and 15 min. at the inward terminal for reaching destination, the competitive position is clear.

The 55 m.p.h. train gains no significant advantage over the 35 m.p.h. car short of 55 miles, nor over the 45 m.p.h. car short of 160 miles, when the car stops for requirements. The 45 m.p.h. train doesn't catch the 35 m.p.h. car until 120 miles nor the 45 m.p.h. car until 150 miles, when it is at rest.

### Rail Targets too Low

Now take a leap into the future. Let us assume that the car still potters around in towns at 15 m.p.h. but averages 50 m.p.h. in the open. Let us set against this speed rail, still with terminal time and with two alternative speeds, those of the modernisation plan, 60 m.p.h. and 75 m.p.h. At 60 m.p.h. rail has no significant advantage until the car stops for a meal at 180 miles. At 75 m.p.h. there is no advantage until 100 miles and no significant advantage until 120 miles.

There is no escape from the conclusion that 60 m.p.h., *inclusive of intermediate stops*, will not do. Since the 75 m.p.h. train is not competitive for speed under 100 miles and gives no significant advantage under 120 miles except where travel by car is slower than assumed, we must seek on the shorter journeys for other competitive advantages in cost, comfort, and so on.

It is a hard fact that excluding season tickets, 80,000 people or 62 per cent of all the bookings from Kings Cross and 72,000 people or 83 per cent from Sheffield in May this year were for less than 120 miles. We must seek those other competitive advantages without delay and without fail. Secondly, what follows from the conclusion that the 60 m.p.h. train will not do? This is something which the Great Northern know beyond personal adventure. To run trains at an average of 75 miles an hour we need 100 miles an hour track, well over 3,000 horsepower under the bonnet and, above all, strength of mind to limit the number of speed restrictions whether permanent or temporary.

\* Abstract of lantern lecture to Railway Students' Association.

ary and to limit the number of intermediate stops. Nothing less will do. The policy of building for expresses 2,000 h.p. diesels with a maximum speed of 90 m.p.h. already lies in ruins around us. In terms of what the future holds they are the equivalent of the Stanier Black Five and the Thompson B1. Away with them on to freight trains. Deltics and electrics only, and those worked to the limit of their power, will suffice.

It is profoundly disturbing to find that so little of the modernisation plan is yet matching the 75 m.p.h. standard. And how the realisation of this fact is not percolating. The new multiple-unit Pullmans are to average about 60; the Kent Coast electrification of the Southern only 50. Even on the principal race tracks of the country after electrification Newcastle at 66 m.p.h., Liverpool at 63½, Sheffield at 67, will not do. Only Doncaster at 73½ and Peterborough at 77 m.p.h. are really in our market. If we are going to sell speed we must do better than this.

### Frequency

More and more railways are following the pattern of the Southern in interval timetables of high frequency. The ideal frequency is not capable of exact proof. I put in issue that on the principal routes (and principal routes are all we should operate) except at night nothing less will do than a half-hourly service up to 70 miles and an hourly between 70 and 300 miles. Moreover, since the pattern must give services not only between London and each principal town on the line of route but between those towns themselves, either the main-line expresses must make fairly frequent intermediate calls or there must be a closely linked system of feeders or, more probably, a combination of both.

For the Great Northern we propose an hourly group of three expresses respectively to Newcastle, Leeds and Sheffield—Hull, with linked feeders at Peterborough and Doncaster or York. In essence this is a development of the Southern Portsmouth pattern, with three prongs for destination instead of one. For shorter distances the Southern pattern to Brighton is as good as I know: direct non-stop expresses supplemented by others making the important intermediate calls.

Punctuality and safety are not news. Unpunctuality and a bad safety record quickly drive traffic away. There remains comfort. Comfort is mental and it is physical. Here, if we choose, we have massive advantages over the car. But the train needs less noise, either by non-opening windows and air-conditioning or better insulation, and smoother riding.

### BRITISH LOCOMOTIVES

#### Notable Film

ON November 24 the Locomotive and Allied Manufacturers' Association held a presentation showing of the Central Office of Information film *British Locomotives*. The guests were received by the president of the association, Sir George H. Nelson, Bart., who introduced the film. The distinguished guests included the Minister of Transport, Mr. Ernest Marples, the Chancellor of the Duchy of Lancaster, Dr. Charles Hill, who is responsible for co-ordinating the information services of H.M. Government, and the chairman of the British Transport Commission, Sir Brian Robertson.

Sir George Nelson, welcoming the guests to the première, said: "This country must export to earn the vital foreign currency to pay for the food which we cannot grow and the raw materials which do not exist in this island of ours. All of us have a major responsibility towards the national economy for helping the export business and this we can do in two ways. The first is the provision of an efficient transport system so that raw materials can be brought to our factories and finished goods transported to the docks as quickly and cheaply as possible. We all applaud what British Railways are doing in this connection; we in the manufacturing industry have pledged them our support in every way to carry through the modernisation programme in time. The second contribution which we can make to the export drive is by the direct sale of our products overseas and this the locomotive industry has done with striking success as you will see in this film. To continue to be successful in its efforts the industry needs the support of Her Majesty's Government and also of the home railways.

### Excellent Work

"With regard to Government assistance I should like to pay tribute to the excellent work which the Board of Trade does for British exporters. From time to time I feel we shall have to seek further help from the Government, particularly in connection with the financing of overseas projects. The railway modernisation plan is a tremendous challenge and opportunity, not only to the British Transport Commission itself, but to the locomotive, rolling stock and railway equipment industries. The modernisation programme is providing those industries with a home market which is essential to us as a basis for exports."

Sir George hoped that collaboration with British Railways would lead to the production for export of British standard locomotives which would be in the forefront of technical progress. The B.T.C. was collaborating in the United Kingdom Railway Advisory Service to assist in solving railway problems overseas and there was the British Railways electrification conference and exhibition next October to show what we were doing in the development of a.c. electrification. The film was a striking demonstration of collaboration between Government, Transport Commission and the locomotive industry and was the first C.O.I. film to feature a particular industry.

Dr. Charles Hill, praising the film after its showing, said 140 copies would be going to 75 countries to be shown to prospective customers of the industry. There are eight foreign language editions. It will also be shown on television networks and is available in 16-mm. form.

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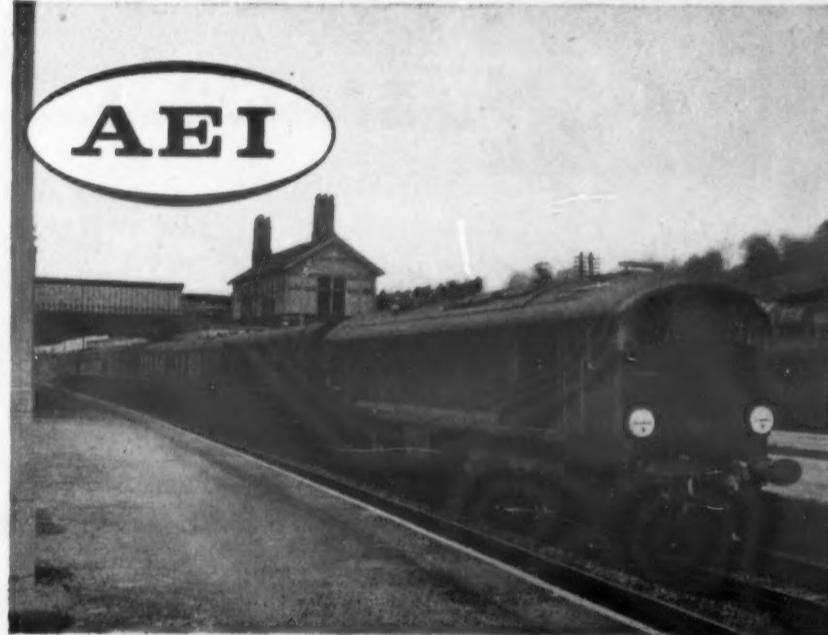
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The Diesel-electric locomotive standing in Chilley station.

## DIESEL ELECTRIC LOCOMOTIVES

The photograph shows one of the 20 Co-Bo Diesel Electric Locomotives supplied by the A.E.I. Traction Division to British Railways—one of the many orders received in connection with the British Transport Commission's modernisation programme.

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## BOOK NOTICES

### A Spate of Railway History

**BRITISH RAILWAY HISTORY—1877-1947.** By C. Hamilton Ellis. (London: George Allen and Unwin, Limited, 40 Museum Street, W.C.1. Price 35s.) The first part of Ellis's monumental history of railways in Britain took the story from the reign of William the Fourth to 1876; now he goes on through the late Victorian climax of railway expansion to nationalisation in what may be described as a long-awaited second volume. The aim is broad history, not to provide a reference book. He deals with the crossing of such water gaps as the Tay, the Forth, and the Severn, the Watkin empire, deep-level and overhead railways, and the relation of the railways to their employees. There are incisive word portraits of such men as Richard Moon, the railway tycoons of their day. He puts the golden era of the railways between the death of Queen Victoria and 1914—when "even the Hull and Barnsley paid dividends." The general reader is put in the picture with labour news, technical developments, the fate of minor lines from the County Donegal to the Invergarry and Fort Augustus or the Rother Valley, what the railways did about the motor bus and how they conducted their main-line business, with pungent and illuminating description. We hope a wide section of the educated public and not merely railway fans and railway people will read about railways as presented in this volume.

**BEDFORD MANUAL.** (Bedfordshire: Vauxhall Motors, Limited, Luton.) Comprehensive, concise and convenient, this latest aide memoire for Bedford distributors, agents and salesmen provides the answer to every question likely to be asked about the current extensive range of Bedford commercial vehicles. Bound in a durable loose-leaf Mult-O cover, the manual is of convenient size and light weight and it is intended that new pages will be issued as developments in current designs or the addition of new models make it necessary. Engineering features as well as weights, dimensions and equipment of all Bedford chassis and standard bodies are covered, including bodies produced specifically for Bedfords by independent coachbuilders. The pages are set in a clear type and the text is well supported by illustrations.

**THE FESTINIOG RAILWAY—VOLUME II, 1890-1959.** By J. I. C. Boyd. (Surrey: The Oakwood Press, Tandridge Lane, Lingfield. Price 30s.) With 47

photographs, 28 drawings, maps and plans, the author takes his account of this fascinating narrow-gauge railway from the plush security of Victorian days at the time when death had severed the connection of the dynamic Charles Spooner to the uncertainties of the 20th century and the drags of diminishing traffic and association with the Welsh Highland scheme. It is a gloomy tale with sharply pointed morals, such as the evils of remote control or the misfortune of having officers such as Colonel H. F. Stephens who inspired hatred of road motors when it would have been more profitable to co-operate with them to develop tourist traffic. The historically minded must be deeply indebted to the author for the care with which he has sifted facts and data and woven them into a coherent account of this famous 1 ft. 11½ in. gauge enterprise. This will go down as one of the best compiled and best produced histories of a small railway.

\* \* \*

**SENT FLYING.** The autobiography of Bill Pegg. (London: Macdonald and Co. (Publishers) Limited, 16 Maddox Street, W.1. Price 21s.) For some 31 years the author was actively engaged in flying aircraft from the time of his first lesson in October, 1925, until he relinquished the appointment of chief test pilot of the Bristol Aeroplane Co. Limited, to become general service manager at its Weston works. He had joined the Royal Air Force as an apprentice in 1921 at the age of 15½ and he was to remain in until 1935 when, after five years at the Martlesham Heath experimental establishment he resigned to join Bristol as assistant chief test pilot. All of this is set down very readily as are the subsequent accounts of test flying the Brabazon and the Britannia, the two large aircraft with which the author's name is particularly associated. Set out in terms of understatement they nonetheless convey extremely clearly what is involved in the first flights of large and complex aircraft and to underline his points the author includes an extract from civil airworthiness requirements.

\* \* \*

**THE CONCISE ENCYCLOPAEDIA OF WORLD RAILWAY LOCOMOTIVES.** Edited by P. Ransome-Wallis. (London: Hutchinson and Co. (Publishers) Limited, 178-202 Great Portland Street, W.1. Price 50s.) From time to time the theme of the railway

and its motive power attracts a book in the grand manner and this encyclopaedia is of them, with over 600 large pages crammed with information, 16 colour plates and several hundred halftone illustrations of locomotives and their equipment. There are numerous sketches in the text to add to its usefulness. Dr. Ransome-Wallis has had the benefit of skilled collaborators: J. M. Doherty and David P. Morgan cover the diesel field; F. J. G. Haut electric motive power; C. R. H. Simpson the reciprocating steam locomotive in general terms; H. M. le Fleming the modern steam locomotive; S. O. Ell locomotive testing; O. S. Nock the steam locomotive in traffic; G. Freeman Allen and Ransome-Wallis share motive power depot organisation; the editor is responsible for descriptions of unconventional motive power and gas turbine developments. Finally, H. M. le Fleming gives concise biographies of locomotive engineers and designers of world renown. It is a good team and they have made more of the book than a mere work of reference—the eye is caught and led into reading long passages of very acceptable information and descriptive argument. It is an exciting commentary on current events that Ipswich motive power depot, illustrated as the apotheosis of steam sheds and completed in 1953, is just becoming an all-diesel establishment. This is a volume which will no doubt be obtained and treasured by many as a handy guide to current practice in motive power.

\* \* \*

**PERMANENT WAY—STORY OF THE TANGANYIKA RAILWAYS.** By Mervyn F. Hill. (East African Railways and Harbours. Price 25s.) A companion volume to *Permanent Way—The Story of the Kenya and Uganda Railway* is now available and deals with the Tanganyika system and its origins. There is a considerable history of the East African coast; it takes the reader step by step to the crystallising of the spheres of influence of the Western Powers in East Africa. When the Germans took over their sector it was largely due to Karl Peters' influence that the German East Africa Company commissioned in 1887 a surveyor to undertake a preliminary reconnaissance of a railway from Dar es Salaam towards Morogoro, but an Arab revolt delayed the project for four years. In 1891 a line from Dar es Salaam to Bagamoyo was surveyed and it was intended that it would later run inland up the valley of the Ruvi river, but nothing came of it. In August, 1891, the preparatory work for the building of the Tanga Line started, but it was not until 1904 that the Imperial Government granted the Ost Afrikanische Eisenbahn Gesellschaft the rights of a corporation and a concession to build and run a metre-gauge railway from Dar es Salaam to Morogoro. Its construction started on February 9, 1905. Mr. Hill recounts the many vicissitudes

which faced the builders before the railway reached Kigoma on February 1, 1914. War followed and the British took over German East Africa—Tanganyika as it was to be known—at the request of the League of Nations. The story follows the progress made by the railway under the British Administration up to its amalgamation with the Kenya and Uganda Railways and Harbours in 1948 to form the East African Railways and Harbours. This, if at times a little detailed for the general reader, is a comprehensive history, well illustrated and indexed. It is on sale at book shops in East Africa and can also be obtained in Great Britain.

\* \* \*

**TALYLLYN RAILWAY CALENDAR, 1960.** (Stourbridge, Worcestershire: R. K. Cope, Brynglas, Beckman Road, Pedmore. Price 2s. 6d., post free.) Many railway enthusiasts look forward to receiving the Talyllyn Railway calendar each year, and they will not be disappointed with the presentation for 1960. With views featuring pictures of locomotives No. 1 *Talyllyn*, No. 6 *Douglas* and No. 4 *Edward Thomas* (the latter with Giesl front end) and various trains in picturesque surroundings, a very high standard of reproduction has been achieved.

\* \* \*

**THE TRAMWAY ERA.** (Stockport, Cheshire: Dennis Gill, for the Tramway Museum Society, 49 London Road, Hazel Grove. Price 2s. 9d., post free.) An attractive booklet which contains four excellent black and white photographs of trams and four fine 8 in. by 4½ in. colour views, has been issued by the Tramway Museum Society, established in 1955 and now setting up a permanent museum at Crich in Derbyshire, to call attention to its activities. The text and illustrations are reprinted from an article reviewing the work of the tramcar which appeared in the autumn issue of *Smiths Automobile Review*.

### B.P. FILMS

#### Audience of Over 14,000

**THREE** films representing recent productions by the British Petroleum Co., Limited, were shown in London last week simultaneously in 10 major cinemas to audiences of over 14,000 B.P. stockholders and their friends and company guests. The company has been making films for many years for public and staff information; in recent years many of the films have been shown in public cinemas and on television services in many parts of the world. The three films selected for last week's performance, all in colour, are all excellent productions and should command wide general interest.

The first film, entitled *ADMA For Short*, underlines how the search for oil is frequently carried on in the most inaccessible and inhospitable places. It describes the building of the *ADMA Enterprise*, a special waterborne drilling platform, and how Das Island, an uninhabited rock outcrop in the Persian Gulf, was transformed into a thriving, bustling industrial centre complete with harbour, airstrip, living quarters and workshops. The film won the prize for the best industrial film shown at the 1959 Venice Film Festival.

#### Use of the Helicopter

One of the newest aids to oil exploration is the helicopter and the second film, entitled *Skyhook*, showed how the several thousand tons of equipment forming a complete oil camp was moved piece by piece from a base camp in Papua over practically impenetrable jungle 17 miles to an operational site at Sireru. Using a Sikorsky S58 helicopter limited to a lift of about 2 tons, as much as 50 tons of equipment was transported in a single day, each piece being set down precisely where it was required for assembly or erection. *Skyhook* is also a prize-winning film, having won the award at the 1959 Turin Film Festival for the most spectacular film on industrial activity.

The final piece in the programme was *The Road From M.I.S.*, M.I.S. being Masjid-i-Sulaiman, where B.P.'s forebear, the Anglo-Persian Oil Company, first discovered oil in commercial quantities in 1909 in the well called M.I.S. 1. With sequences filmed in Persia, Kuwait, Aden, Australia, France, Denmark, Greenland, Canada and Britain, the film illustrates the many ways in which the B.P. organisation plays its part in meeting the world's growing demand for energy.

### Forthcoming Events

**November 28.**—Railway Club. Annual dinner. At Danish Club, Knightsbridge, S.W.1.

**November 29.**—Railway Correspondence and Travel Society. Annual reunion. At Queens Hotel, Birmingham. 2.15 p.m.

**December 1.**—Permanent Way Institution. Leeds and Bradford. Paper by Mr. J. L. Emerson. "Electrification Work." At B.P. Social and Recreational Club, Leeds City Station. 7 p.m.

**Institute of Transport (Midland).** Paper by Mr. G. Dow. "The West Midlands Division of the London Midland."

"At Engineering Centre, Stephenson Place, Birmingham. 6.30 p.m.

**Institute of Transport (North Western).** Joint meeting with Merseyside Section. "The Transport Policy of this Country Lacks Vision." At Gas Service Centre, Manchester Town Hall Annex, Mount Street, Manchester. 2.15 p.m.

**Institution of Civil Engineers.** Paper by Mr. G. Charlesworth and Mr. J. L. Paisley. "The Economic Assessment of Returns from Road Works." At Great George Street, S.W.1. 5.30 p.m.

**Railway Correspondence and Travel Society (Sheffield).** Paper by Mr. R. Dyson. "The Cheshire Lines Committee." At the Livesey Clegg House, Sheffield. 7.30 p.m.

**Institute of Transport (Dundee Discussion Group).** Paper by Mr. E. R. L. Fitzpayne. "The Future of Scottish Road Passenger Transport." Dundee. 6 p.m.

**Institute of Transport (Edinburgh Discussion Group).** Paper by Mr. R. M. Palmer. "Introduction to Work Study." At 23 Waterloo Place, Edinburgh. 5.30 p.m.

**Institute of Transport (Gloucester and Cheltenham Group).** Paper by Mr. J. E. Oxley. "British Inland Waterways." At the Royal Hotel, Gloucester. 7 p.m.

**Institute of Transport (Dundee Discussion Group).** Paper by Mr. E. R. L. Fitzpayne. "The Future of Scottish Road Passenger Transport." Dundee. 6 p.m.

**Peterborough Railway Discussion Group.** Paper by Mr. H. Hudson. "Travel." At Peterborough Technical College. 6.45 p.m.

**Institute of Road Transport Engineers (East Midlands).** Paper by Mr. E. Kellett. "The Design of Radial-flow Turbo-chargers." At Mechanics' Institute, Nottingham. 7.30 p.m.

**December 3.**—B.R. (Western) London Lecture and Debating Society. Paper by Mr. L. W. Ibbotson. "Notes on a Visit to U.S.S.R." At Staff Dining Club, Bishops Bridge Road, W.2. 5.45 p.m.

**December 4.**—Institute of Transport (South Western). Annual luncheon and visit of president. At Imperial Hotel, Exeter. 12.15 p.m.

**Institute of Transport (Western).** Paper by Mr. K. G. Kenrick. "Productivity in Transport." At the Docks Office, Bristol. 1.15 p.m.

**The Railway Club.** Paper by Mr. M. D. Greville. "My Personal Railway Reminiscences, 1899-1959." At Royal Scottish Corporation, Fetter Lane, London, E.C.4. 7 p.m.

**December 5.**—Southern Counties Touring Society. Annual dinner and social. At St. Ermin's Hotel, Caxton Street, S.W.1. 8 p.m.

**Institute of Road Transport Engineers (N.W. Counties).** Annual dinner and dance. At Victoria and Station Hotel, Preston. 8 p.m.

### MARSHALLING YARD OPERATION



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Thirty years of practical experience is embodied in the design and construction of these

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They give maximum reliability with minimum of maintenance, are flexible, easily installed without heavy foundations, and can be mounted on curves.

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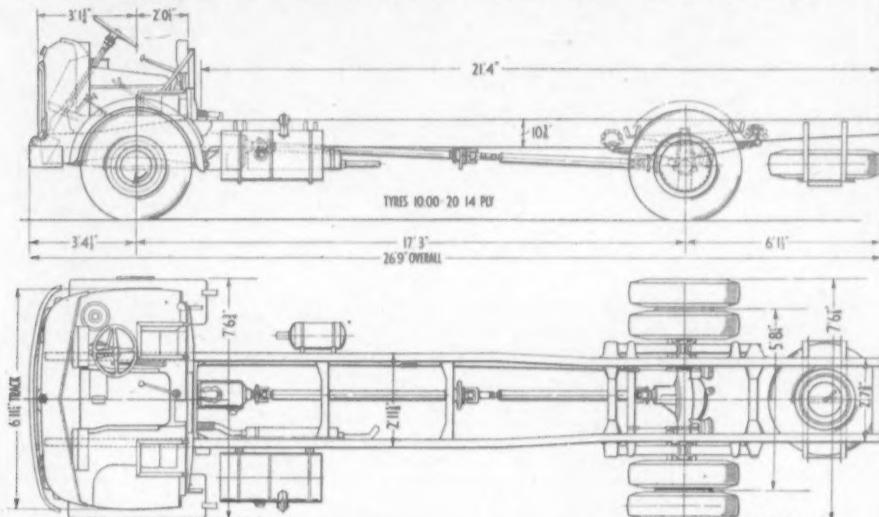
## COMMERCIAL VEHICLE TEST

### A.E.C. Mercury Mark II For 14 Tons Gross\*

#### BIG-ENGINE PERFORMANCE, ECONOMY AND COMFORT

I needed but very short acquaintance with the A.E.C. Mercury Mark II medium-capacity goods vehicle, which we recently took over our standard test route along the hilly Kent-Surrey border, for us to form the opinion that here was a vehicle entirely suited to the purpose for which it was designed. Impressions of complete adequacy gained during the early stages of the run strengthened as the test progressed and a tribute to the

vacuum-hydraulic or air-pressure braking, while on the 14-ton chassis the air brakes only are offered. The Mercury is based on a flat-topped main chassis frame of bolted construction, having pressed-steel channel-section sidemembers  $\frac{3}{8}$  in. thick with 3-in. flanges and a maximum depth of  $10\frac{1}{4}$  in. Suspension is by four semi-elliptic leaf springs, with double-acting telescopic hydraulic dampers at the front and helper springs at the rear



Drawing of A.E.C. 1.w.b. 2GM4RA Mercury Mark II chassis giving principal dimensions

effortless manner in which the Mercury performed was the fact that after completing over 100 miles of solid hard work, we were sorry that the test was over and would have been quite content to repeat the routine.

The basic Mercury design, which was introduced at the 1953 Scottish Motor Show for the then maximum gross weight of 12 tons on two axles, started off with a number of advantages. Not the least of these were the traditional A.E.C. high standards of design, materials and workmanship, giving wide margins of strength, and a new direct-

(except tractor chassis). Steering is by A.E.C. worm and nut gear with a mean ratio of 40 to 1.

The A.E.C. AVU470 six-cylinder diesel engine of 469 cu. in. (7,685 litres) capacity is set in the Mark II Mercury to produce a maximum output of 112 b.h.p. at 2,000 r.p.m. and 325 lb./ft. torque at 1,100 r.p.m. Alternative settings are 103 b.h.p. at 1,800 r.p.m. and 125 b.h.p. at 2,200 r.p.m. The engine drives through a 14-in. single dryplate clutch with hydraulic pedal linkage and the A.E.C. five-speed gearbox having inertia-lock synchromesh on all but first gear. On the longer-

#### TEST RESULTS

##### AT A GLANCE

###### Vehicle Details

MAKER: A.E.C., Limited, Southall, Middlesex.

TYPE: Mercury Mark II 14-ton gross goods chassis.

ENGINE: A.E.C. AVU470 six-cylinder direct-injection four-stroke diesel; bore 4-1 in. (112 mm.), stroke 5-12 in. (130 mm.), swept volume 469 cu. in. (7,685 litres); maximum 112 b.h.p. at 2,000 r.p.m., 325 lb./ft. torque at 1,100 r.p.m.

TRANSMISSION: Clutch, hydraulically operated 14 in. (355-6 mm.) dia., single dryplate, lining area 187 sq. in. (1,206 sq. cm.); gearbox, A.E.C. five-speed synchromesh (ex. first), ratios 6.25, 4.4, 2.65, 1.86 and 1 to 1 forward, 6.01 to 1 reverse; driveshaft, two-piece open tubular with Hardy Spicer 1600 needle roller bearing universal, transmission damper and centre steady bearing; rear axle, spiral bevel gear and fully floating halfshafts, standard ratios 6.87 or 6.28 to 1. A double-reduction axle and other ratios are available optionally.

BRAKES: Compressed air-powered Girling cam-operated leading-trailing equipment all wheels; total lining area 678 sq. in. (4,374 sq. cm.). Handbrake mechanically linked to rear wheels.

TYRES: 10.00-20 14-ply, twin rear.

WHEELBASE: 17 ft. 3 in. (5.258 m.).

WEIGHT: Chassis and standard Park Royal cab in licensing order 3 tons 19*1* cwt. (4,026 kg.).

injection four-stroke diesel engine of greater capacity than was usual in vehicles of this class, providing outstanding performance. The cornerstone of the design philosophy was versatility and its effectiveness was proved when the two-axle weight limit was raised to 14 tons and the Mercury was able to fill this more exacting role without any major design changes.

The current Mercury range embraces Mark I and Mark II versions for 12 and 14 tons gross weight respectively, the Mark I being available with four wheelbases from 8 ft. 9 in. to 16 ft. 3 in. and the

###### Test Results

ROUTE: Standard route in Kent and Surrey with London addition.

CONDITIONS: Cool and showery.

RUNNING WEIGHT: 13 tons 16*1* cwt. (14,034 kg.) plus crew of three.

PAYOUT: Equivalent 9 tons 2 cwt. (9,246 kg.) (assumes 10 cwt. platform load).

FUEL CONSUMPTION: (i) over standard 15-mile out-and-back route 12 m.p.g. (4.25 km./litre) at 27.3 m.p.h. (43.7 k.p.h.) average speed. (ii) In 8 miles simulated trunk service on open undulating road 12.8 m.p.g. (4.43 km./litre) at 40.5 m.p.h. (65 k.p.h.).

GROSS TON M.G.: (i) 168 (60.4 tonnes/km./litre). (ii) 175 (62.9 tonnes/km./litre).

PAYOUT: TON/M.G.: (i) 109.2 (39.2 tonnes/km./litre).

(ii) 113.7 (40.9 tonnes/km./litre).

MAXIMUM GRADING CLIMB: 1 in 6 (16.6 per cent).

TURNING CIRCLE: 68 ft. (20.7 m.).

ACCELERATION: Averages of four runs, two in each direction, through gears:

0.20 m.p.h. 15.2 sec.

0.30 m.p.h. 31.4 sec.

at top gear:

10.20 m.p.h. 14 sec.

10.30 m.p.h. 25 sec.

Braking: Best measured stop on dry level tarmac from 30 m.p.h. 92 ft. (15.85 m.), equivalent to 18.8 ft. per sec. per sec. or 0.58 g. overall deceleration. Don meter 65 per cent. Handbrake only, 26 per cent Don meter.

ESTIMATED TOP SPEED: About 48 m.p.h. (77 k.p.h.).

OVERALL FUEL CONSUMPTION: For 105 miles of fairly hard driving, 30 miles in London suburbs and including stops and low-gear work in various tests, 10.25 m.p.g. (36.3 km. per 100 litre).

wheelbase chassis, a two-piece open tubular propeller shaft, with Hardy Spicer 1600 series needle roller bearing universal joints, intermediate steady bearing and a transmission damper, continues the drive to the rear axle.

Our test chassis was a 17 ft. 3 in. wheelbase unit, suitable for 21 ft. 4 in. long body, fitted with standard flexibly mounted Park Royal steel cab. Equipped ready for the road, with full 36-gal. fuel tank, the chassis and cab had a tare weight of 4 tons 5 cwt., leaving a margin of 9 tons 15 cwt. for body and payload inside the permitted maxi-



The standard chassis and cab has an operating tare weight of 4 tons 5 cwt., allowing for a payload of over 9 tons with average platform body

Mark II in three wheelbases from 11 ft. 6 in. to 17 ft. 3 in. A range of final drive ratios extends from 4.7 to 1 to 7.84 to 1, and an alternative double-reduction rear axle for extra heavy-duty applications has been introduced recently. The new axle has increased the versatility of the Mercury range, for whereas with single-reduction axle the Mark II tractor is cleared for 18 tons gross combined weight, this is increased to 22 tons when the double-reduction unit is fitted.

Apart from wheelbase lengths and tyre equipment, the principal differences between 12- and 14-ton Mercury chassis are in stub axle dimensions and the fact that the 12-tonner is available with

\* No. 465 in the MODERN TRANSPORT series of road tests.

(Continued on page 10)

## BARIMAR saves The Motor Industry Thousands of £'s

Here is a repair of which Barimar are mighty proud. It was a scientific welding job in which every moment counted, for many thousands of pounds of productive work for the British Motor Industry was at stake.

The pictures tell a vivid story of the repair of the crown of a mighty power press that stamps out tens of thousands of body panels and other components for the motor industry in Great Britain every year. This press crown weighed twenty tons and the damage that had to be repaired was grievous. The top picture shows two of the four heavy toggle-shaft lugs that were broken right away. The repair of each lug was a major operation and was the kind of poser that Barimar experts delight to tackle and solve.



There were also serious cracks and fractures in the main body of this huge casting and twenty-five feet of cracks and fractures had to be welded in metal up to 7 in. thick. Throughout the job called for superlative welding—Barimar Scientific Welding that stands up to tremendous strain.

### MOTOR TRANSPORT REPAIRS

Most Breakages to Motor Parts can be Repaired by Barimar at a Big Saving on the cost of New Parts

**CYLINDER BLOCKS:** Every kind of crack and fracture, broken bore, scored bores, pitted and sunken valves, etc.

**CYLINDER HEADS:** Broken and cracked heads, cracked and worn valve seats, chipped, warped or damaged faces, broken rocker standards, defective mainshaft bearing housings, cracked stud holes, stripped plug threads. **IRON OR ALUMINIUM:**

**CRANKCASES:** Fractures caused by broken connecting rods and run big ends, broken-off bearing arms, mismatched sumps, cracked stud housings, broken bearing and flywheel housings, stripped die-pins, threads. **IRON, ALUMINIUM OR ELECTRON:**

**CRANKSHAFTS:** Broken across web or journal, cracked, scored, threads stripped or worn.

**TRANSMISSIONS:** Cracked or broken gearbox and axle casings, damaged gear teeth, worn splines and tapers, fractured shafts, cracked differential casings.

**BARIMAR—The World's Scientific Welding Engineers**



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no matter what your trailer or your load. In particular,

if you're hauling a heavy load at high speed you don't want to be distracted by instability and jack-knifing. You want the confidence

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Clayton Dewandre supply braking equipment to all the trailer manufacturers in Great Britain and really know the business.

No matter whether it's vacuum or air pressure power operated, hydraulic or mechanical operation, automatic or independent control, we can supply the equipment to give you smooth, progressive trailer braking — control — with confidence.

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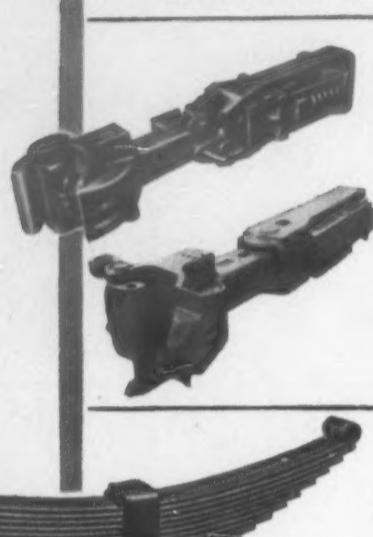


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Assembled from parts of simple rugged design these couplers ensure safety to operatives, are easy to operate and require minimum maintenance.



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for all types of Railway Rolling Stock

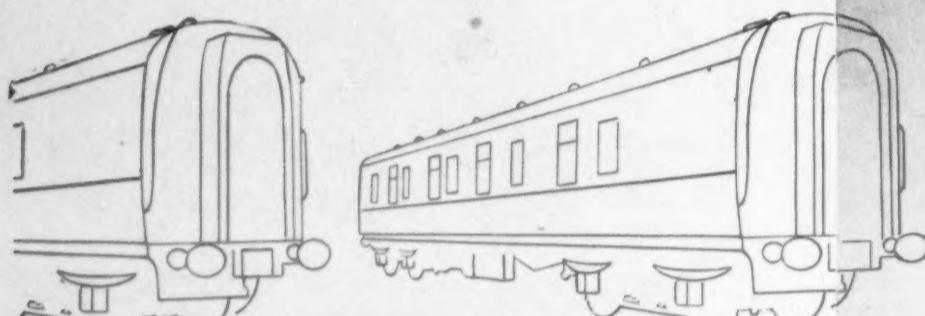
## ENGLISH STEEL



### ENGLISH STEEL CASTINGS CORPORATION LTD ENGLISH STEEL SPRING CORPORATION LTD

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## A wagon every 12½ minutes

At Pressed Steel's Paisley factory the production of railway wagons has been as high as the unprecedented figure of one every 12½ minutes. All in all, Pressed Steel have produced one hundred thousand railway wagons in the last ten years. Wagons of all types, for all gauges, at home and abroad. You see some of this rolling stock opposite.

The figures prove that Pressed Steel have tremendous productivity—and a rich store of engineering experience. But they tell only part of the story. For they do not show the progressive approach of our design staff, the quality of engineering that goes into each job, and our record for prompt delivery. Nor do they show how constant, intensive research has made Pressed Steel ready to play an active part in the future development of the world's carriages and wagons.

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Manufacturers also of motor car bodies,  
Prestcold refrigeration equipment and  
pressings of all kinds.

## NEWS FROM ALL QUARTERS

### Tonbridge By-Pass Foreshadowed

Approval in principle has been accorded by Kent County Council to a route for a by-pass to Tonbridge on the west side of the town.

### Trams Serve Mountain Power Scheme

Eleven trams have been sold by the Zurich City Tramways to the contractors who are to build an electric power station in the mountains at Linthal. A new tramway system is being constructed first, some 6,500 ft. above sea level, and including a tunnel 1½ miles long. The 11 cars, all four-wheelers, comprise two motor cars and two trailers for passenger service, four motor cars for conversion to cement wagons, and three motorised track-sweeping cars for general work.

### Rail Rates Up—Road Taxes to Follow?

Austrian Federal Railways is to introduce increased rates for both passenger and goods tariffs from January 1, 1960. Freight charges will go up by an average of 25 per cent and the number of tariff groups reduced from seven to five. The present exception rates will be maintained, but will be raised by anything up to 20 per cent. As the railways fear that the result of these increases will be to transfer both freight and passenger traffic to roadways, they have applied to the Ministry of Finance for transport tax on certain road vehicles to be increased.

### International Transport of Certain Perishables

The working party of the International Container Bureau on the transport of perishable foods has examined a draft agreement which will be substituted for Annex CI of the specifications for international road transport consignments. It provides for the standardisation of special equipment and the checking of the standards with which it must comply and the responsibility of the consigner (or third parties) with regard to the steps to be taken to ensure the maintaining of the temperatures stated for the foodstuffs covered by the draft (quick-frozen foodstuffs, frozen foods and certain foodstuffs of animal origin).

### Two More By-Passes

The Minister of Transport this week opened the new Ingatestone by-pass on the London-Great Yarmouth trunk road A12. The two-mile-long by-pass leaves the existing A12 just north of Heybridge and, after passing under Fryerning Lane, rejoins it half a mile beyond Ingatestone village. It has dual 24-ft. carriageways with hard shoulders and lay-bys. The Rector of Ingatestone wrote a *Hymn of Courtesy* (to the tune *All People that on Earth do Dwell*) for the occasion. Referring to the M1 motorway, the Minister of Transport said that many lessons would be learned, but in a sensible way. Accurate observations would be analysed scientifically, but not hysterically. "Action will be taken that is bold, firm, sensible and fair. In other words, it is not going to be a case of panic stations." Also opened, by the Governor of Northern Ireland, was the Sydenham by-pass which, it is said, will shorten by 20 min. the road journey between Belfast and Bangor—a busy rail route. This by-pass is some 2½ miles long, but cost £800,000.

### Leeds Urban Motorways Plan

A plan has been prepared for the expenditure of more than £10 million on urban motorways in Leeds to supplement or replace existing radial roads. They would connect the city centre with the outer ring road. The total mileage would be quite short—about 6½ miles.

### Belgian Railway Plans

A replacement of steam traction by railcars on little-used passenger lines, a general closing of goods stations and the raising of passenger fares are to be the main points in a long-term programme which has been drawn up by the Belgian Government for the Société Nationale des Chemins de Fer Belges. The railway's total deficit for the current financial year is estimated at some £3,273,000, despite the granting of Government subsidies amounting to as much as £57,357,000 over the year.

### Two German Motor Manufacturers

Two of the biggest names in the West German motor industry, Daimler-Benz and B.M.W. (Bayerische Motorenwerke) have been linked as a result of a consortium taking a majority interest in B.M.W. Daimler-Benz is a member of this consortium, together with the Deutsche Bank, the Bavarian State Bank and the Bavarian State Reconstruction Corporation. B.M.W. has been running at a loss since the end of the war. Daimler-Benz is expected to place large orders with B.M.W., which lost much of its assets after the 1939-45 war through dismantling operations and loss of a plant in East Germany.

### Roller Shuttered Wagons

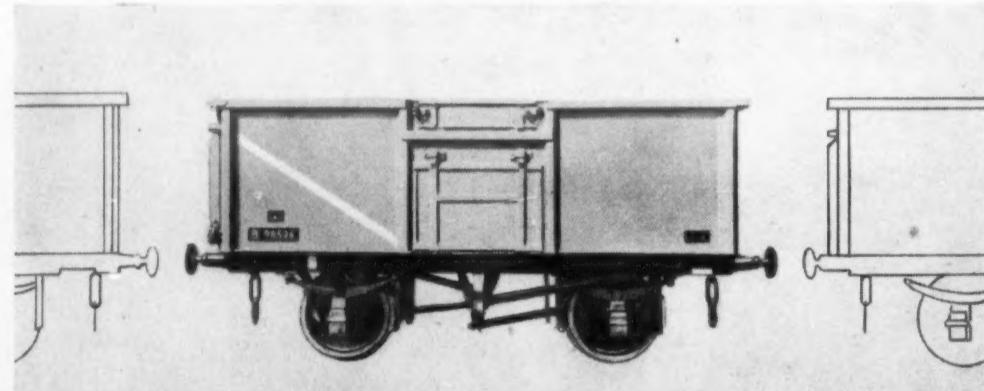
French manufacturers, Compagnie Industrielle de Matériel de Transport (C.I.M.T.) and Ateliers de Forest, have designed and built two new types of railway freight wagons—one with sliding roof, the other with light alloy roller shutters—that provide free access to all parts of the car. Among trials made with the sliding-sides type were the loading of mineral water and beer on pallets, galvanised iron sheets, rubber and paper goods, and loading of sheet steel into the sliding-roof model. The roller shutters are protected on the inside by a removable safety grating and a steel plate, hinged to the floor, which can be lowered and used as loading bridge. The sliding-roof wagon is designed in a similar way.

### More Silver Trains on the District Line

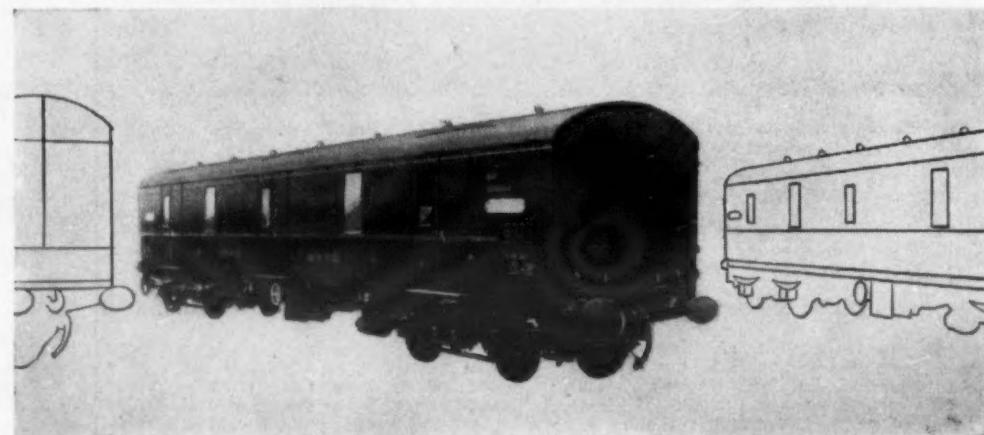
Two further six-car and one eight-car trains of silver finished or painted R-stock cars have just gone into service on the London Transport District Line. Each six-car train is made up of new non-driving motor cars with unpainted aluminium alloy bodies, and converted driving motor cars, which have been painted to match. The 13 new cars are known as the R.59 stock and are generally similar to the R.49-class vehicles, which came into use in 1952. They are built by the Metropolitan-Cammell Carriage and Wagon Co., Limited. The three new trains differ from previous R stock in that they are equipped with modified synchronised compressor control circuits.



British Railways 58-foot Gangwayed Standard Brakevan.



16-ton all steel Mineral Wagon. 72,000 of these have already been delivered from our Paisley works.



British Railways 57-foot Utility Van.

COMMERCIAL AVIATION

T.W.A. Transatlantic Jets

SWISSAIR FREIGHT

ON November 23 Trans World Airlines began transatlantic operations with its Boeing 707 Intercontinental jets when the inaugural flight of the new service left New York at 7.30 p.m., local time, for the 6 hr. 25 min. flight to London, whereafter it continued to Frankfurt. The first westbound TWA Intercontinental jet from Frankfurt and London to New York left the former at 3.45 p.m. and London Airport at 5 p.m. on November 24. The scheduled nonstop flight from London was 7 hr. 30 min. Aboard the aircraft was a number of distinguished guests including Air Commodore Sir Frank Whittle. The T.W.A. version is designated the 707-331 and accommodates 134 passengers, 32 de-luxe plus 102 economy class. Its range is more than 5,000 miles with a maximum cruising speed of 605 m.p.h. and it is powered by four Pratt and Whitney JT4 engines. Initially T.W.A. is operating three jet flights a week between London and New York, in each direction. This will be increased to a daily service in January, 1960, and further increased to twice daily for the peak spring and summer seasons. On December 3 the airline will place Boeings on its New York—Paris—Rome service.

Railway Interest in Flying Tiger

The New York Central System has announced that it has invested \$5 million (about £1,785,000) in the cargo airline, Flying Tiger Line, Incorporated. A spokesman for the railway said that it intended to study the possibility of what he called "air-surface" movements.

B.O.A.C.—President Lines Agreement

An air-sea travel agreement signed in New York between the British Overseas Airways Corporation and American President Lines means that a round-the-world traveller can save as much as 10 per cent of the full air fare. Before this agreement was signed anyone combining air and sea travel had to pay the full one-way fare. Any passage now booked including air and sea on the round trip qualifies for the discount.

K.L.M. Results Improve

Traffic carried by K.L.M. (Royal Dutch Airlines) during the third quarter of 1959 (July—September) increased by 17 per cent over last year, and the average payload rose from 63.7 to 65 per cent. Traffic for the first nine months increased by 12.2 per cent. The period January to September was financially satisfactory to K.L.M. Net earnings amounted to \$4 million which was \$0.6 million (16 per cent) more than in 1958. An interim dividend of 3 per cent has been declared.

Air B.P. Expands in Canada

B.P. worldwide aviation fuelling facilities have been extended to Canada where Air B.P. is to supply jet fuel for the new fleet of Douglas DC8s due to come into service for Trans-Canada Air Lines in 1960. Air B.P. already supplies part of T.C.A.'s European requirements of aviation gasoline. A new bulk storage plant for aviation fuels is to be built at Dorval Airport, Montreal, and should be completed early next year. Aircraft fuelling vehicles, including Air B.P.'s first 10,000-gal. capacity Yorkshire fueller, have already been shipped from England to Canada.

Prize for Man-powered Aircraft Flight

The Royal Aeronautical Society has announced that a prize of £5,000 has been offered by Mr. Henry Kremer for the first successful flight of a man-powered aircraft designed, built and flown within the British Commonwealth under conditions to be laid down by the Royal Aeronautical Society. These conditions will be announced as soon as possible and the Royal Aero Club will be invited by the president of the society, Mr. Peter G. Masefield, to act as official observers. Mr. Kremer, who has offered the prize personally, is chairman and managing director of Microcell, Limited, and a director of B.T.R. Industries, Limited.

British Airports in August

Air transport movements at United Kingdom aerodromes in August, 1959, numbered 50,196, an increase of 2 per cent compared with August last year; the number of passengers handled increased by 12 per cent to 1,294,643. Freight picked up and set down amounted to 35,597.8 short tons, which was an increase of 22 per cent. In the London area as a whole there was a slight increase of 0.2 per cent in air transport movements and an increase of 12 per cent in the number of passengers handled. At London Airport there were 13,447 air transport movements, an increase of 1 per cent compared with August last year and 514,713 passengers were handled, an increase of 11 per cent.

Most airports showed increases in passenger traffic over August, 1958, and amongst these were Gatwick by 43 per cent to 76,199, Edinburgh (Turnhouse) by 23 per cent to 21,043, and Southend (Rochford) by 19 per cent to 56,902. Other large increases in passenger traffic were at Bourneemouth (Hurn) by 115 per cent to 6,919, Leeds-Bradford (Yeadon) by 39 per cent to 13,423, Newcastle (Woolsington) by 31 per cent to 17,338, Blackpool (Squires Gate) by 24 per cent to 19,153, Lympne by 21 per cent to 11,795, Aberdeen (Dyce) by 20 per cent to 6,926, and Inverness (Dalcross) by 20 per cent to 42,377.

Another Swissair Freight Service

A new all-freight service between Zurich and Stuttgart was opened by Swissair with the introduction of winter schedules. Until December 17 it operates thrice weekly in each direction. Departures from Zurich are on Wednesday and Thursday mornings and on Saturday afternoons. In the opposite direction flights leave Stuttgart later the same day. An additional return flight will operate on Fridays from December 18. Dakotas are used on this service. The airline has again reported a vigorous expansion of freight traffic in the first nine months of this year compared with the same period of 1958. While total capacity produced rose by about 8 per cent, freight ton-kilometres performed increased by 29 per cent to 17,170,000. In the first nine months of this year freight accounted for 18.6 per cent of capacity utilised over the Swissair network, compared with 15.6 per cent in the same period of 1958. Chiefly contributors to these favourable results were the twice-weekly all-freight services on the North Atlantic flown by DC6A. A 49 per cent increase in freight traffic was recorded for this sector in the period under review. On the Far East route freight traffic rose by 31 per cent, while on the Middle East routes it was up by 11 per cent and in Europe by 5 per cent. On the South Atlantic, however, freight traffic did not quite reach the level of a year ago.

## A CIVIL ENGINEER'S GOLDEN JUBILEE



[Princes Press]

*V. A. M. Robertson.*

Mr. V. A. M. ROBERTSON, C.B.E., M.C.,  
M.I.C.E., M.I.Mech.E., M.I.E.E., M.Inst.T.

\* \* \* \* \*

This month sees the completion by Mr. Vernon Alec Murray Robertson of 50 years' service on the railways. Born in 1890 and educated at Dover College and the Crystal Palace School of Practical Engineering, he was articled in 1909 to a consulting engineer to the London and North Western Railway, and in 1912 became an assistant to the new works engineer, South Eastern and Chatham Railway. In 1914 he enlisted in the London Scottish; a year later he was gazetted to the Royal Engineers, and after continuous service in France from the end of 1915 until May, 1919, he was demobilised with the rank of major, having won the M.C. and Bar for carrying out bridgework under fire. In 1919 he rejoined the S.E. and C.R., but after a few months joined the Great Eastern Railway; with that company and the L.N.E.R. he remained until 1928, having held the position of district engineer (Stratford) from 1921. He then became civil engineer to the London Underground Railways, retaining that position under the London Passenger Transport Board. In 1937 he was appointed chief engineer (civil), and, in 1940, engineer-in-chief, which post he left in December, 1943. Two months later he took up the appointment of chief civil engineer, Southern Railway. Retiring from that post with the Southern Region on March 31, 1951, he became a partner in Sir William Halcrow and Partners, consulting engineers, and, although he relinquished that partnership last May, he continues as a consultant thereto on railway matters. Mr. Robertson was president of the Institution of Civil Engineers in 1949-50, being the first railway engineer to achieve that distinction since 1929, is a Fellow of the Permanent Way Institution, of which he was president for four years, including 1944, its diamond jubilee year, and is a former vice-president of the Institute of Transport. He is a member of the Institution of Mechanical Engineers, Institution of Electrical Engineers, the Engineering Institute of Canada, the Royal Institution, the Royal Society of Arts and the Société des Ingénieurs Civils de France. He is a member also of the Smeatonian Society of Civil Engineers, of which he was president in 1957, and of the Association of Consulting Engineers, of which he was chairman in 1956-57. He is an honorary fellow of the Society of Engineers, and an honorary member of the Institution of Royal Engineers and of the American Railway Engineering Association, and has served on several Government committees. He was made a C.B.E. (Civil) in the King's Birthday Honours, 1943, and held the rank of colonel in the Engineer and Railway Staff Corps, Royal Engineers (T.A.), being commandant from 1952 to 1955.

## SCOTTISH BUSES

### Municipal Board Proposal

### PUBLIC ACCOUNTABILITY

ALTHOUGH the majority of English and Welsh municipalities refrained from obtaining extensive extra-mural powers for bus operation on their own account there were notable exceptions, as a result of which Sheffield and Walsall, for example, acquired spheres of operating influence similar to those of an area agreement bus company. In Scotland, Glasgow attained a similar position through acquisition of tramways at Airdrie, Clydebank and Paisley. In a paper recently presented to Institute of Transport meetings in Scotland, Mr. E. R. L. Fitzpayne, general manager, Glasgow Corporation Transport, refutes the suggestion made earlier this year in a paper by Mr. R. Mackenzie, general manager, Scottish Omnibuses, Limited, that municipal operators were content to serve only their own area and deplores the suggestion made in the Swindon appeal case that it was more desirable that corporations should serve inside borough boundaries and companies alone should have the chance of new business outside.

#### Against Local Authorities

Although this "general rule" is not part of the Road Traffic Act it is frequently quoted against local authorities making similar applications to that of Swindon, which wanted to serve a factory outside the boundary. The Municipal Passenger Transport Association has taken a serious view of this development, and, as there is a tendency to support and place greater emphasis on a nationalised outlook for road passenger transport, it is opportune to press the argument for the alternative, i.e. the development of municipal transport. With the exception of a number of small bus operators there is now no private enterprise bus transport in Scotland, because the capital of Scottish Omnibuses is owned by the British Transport Commission, which is a Government agency, whilst that of the municipalities belongs to the local ratepayers.

"I believe that the time is not far distant when the burden of costs to operate bus services may become intolerable and the municipalities might in despair surrender their rights and encourage the establishment of some common ownership," says Mr. Fitzpayne. Scottish Omnibuses, not being a private company, would not be in the same position, as it could always rely on assistance from the State. Such a step would not be in the best interests of the common weal; a large, impersonal board controlling all the buses in Scotland would be a retrogressive step. One might consider whether the town councils of such important and progressive towns as Paisley, Perth, Kilmarnock, Inverness—to mention only a few—should not enjoy the same direct interest in operating transport in their localities as the existing four municipalities, for, if an argument could be established justifying the operation of passenger transport by Aberdeen, Dundee, Edinburgh and Glasgow, it would be difficult to deny the same right to other towns in Scotland.

Mr. Fitzpayne claimed for the Scottish cities that although their transport had paid sums in aid of the rates, he knew of no Scottish undertaking which had been aided by the rates: "I believe that under existing legislation in Scotland it would be difficult to support municipal undertakings from the rates." He, nevertheless, disagreed with the contention that bus users and ratepayers were not necessarily the same people. If ratepayers did not use the buses their wives, children or employees did. Moreover, money was frequently spent on enterprises in which particular ratepayers had no interest, such as libraries, art galleries and education.

#### Local Representation

Whilst accepting the well-tried principle of municipal control, it must be realised that to control areas larger than the municipality, around which would centre the local and rural transport, some kind of area board would be required somewhat similar to a hospital board or an area fire committee, comprising elected representatives from the various local authorities within the area. Such a board would control the network of services within its area and would also operate express services outside, jointly with other contiguous boards if necessary. The conception of operation under the control of a board such as envisaged offers the advantage, compared with local authority operation, that it takes transport out of the cockpit of local party politics, but it has the advantage over company operation in that the users are afforded much more representation on policy.

The vital issue, therefore, is the principle of transport being controlled by the elected representatives and, furthermore, that the board set up should be of such a local character that the users may have a say in the operation. The principle of such boards is well recognised in this country, but their duties should be very clearly defined at their inception. Their function should be essentially advisory and they should not conflict with management. Management is the work of professional officials whose ability and judgment should not be affected by committees.

#### Public Accountability

To sum-up, it would appear that in the not-too-distant future passenger transport may well face a financial crisis leading to higher charges and reduced services with ultimate extinction unless financial assistance from public funds is forthcoming. It is apparent to all that the present form of nationalisation is not acceptable to the people of this country; that does not necessarily imply criticism of the principle of public ownership but merely the means of execution. Undoubtedly the public dislikes bureaucracy in any form, and there would be criticism of any suggestion that Scottish transport should be controlled by the Transport Commission, centred as it is in London. The alternative suggested might be the setting up of some form of transport board in Edinburgh, but this also would be liable to the same criticism that is at present directed to the general bureaucratic control of nationalised industries.

However, if public funds are used to support passenger transport then there must be public accountability, and one means of attaining this is by means of municipal transport boards established at specific focal points. Apart from the local interest which such boards would engender there would also be the opportunity of comparing the operating costs one with another and fostering local enterprise in such things as funds, services, personnel, type of vehicle and even wages and conditions of service, which should not necessarily follow a common pattern throughout the country, concluded Mr. Fitzpayne.



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## Mercury Mark II on Test

(Continued from page 7)

Mercury proved intrinsically quiet and this contributed to a general feeling of light handling and effortless performance, with consequent reduction of strain on the driver. Fitted with a 5.87 to 1 axle, the higher of the two standard ratios specified for the Mark II, the vehicle had a lively performance and left no impression of being overgeared at full load on our rather hilly route.

### Excellent Top-Gear Performance

Starting from the A.E.C. Southall works, our first objective was a level section of the Great Chertsey Road for acceleration and braking trials, although braking had to be postponed until later

speed the instrument was reading accurately. After turning-circle measurements, the next observed section covered coolant temperature control on the long pull up Caterham Bypass. Here the vehicle was driven at about 15 m.p.h. on full throttle in the highest gear possible (fourth and fifth), to keep fan speed and air through the radiator down to a low level. With an ambient temperature of about 45 deg. F., coolant temperature so far had remained steady around 183 deg. F.; at the end of the one-mile climb it had risen only to 186 deg. F. (86 deg. on the centigrade meter fitted on the vehicle).

On the return run down the bypass, the vehicle



Clean straightforward design and flat-topped chassis frame of bolted construction characterise the A.E.C. Mercury; right, a view into the Park Royal cab with engine cover removed

in the day due to wet roads. In four runs, two in each direction, average times to reach 20 and 30 m.p.h. respectively from rest were 15.2 sec. and 31.4 sec. The high torque of the AVU470 engine gave particularly good acceleration from low speeds in top gear. Pulling away from below 10 m.p.h. was smooth and quiet and average times taken to accelerate from 10 to 20 m.p.h. and from 10 to 30 m.p.h. were 14 and 25 sec. respectively.

This standard of performance made the Mercury particularly pleasant to drive in traffic, plenty of which was encountered during the next stage of our run by way of Richmond, Sheen, Putney, Wandsworth, Streatham and Thornton Heath to Purley Way. Speed of other traffic away from checks was comfortably matched and the number of necessary gear changes in this kind of going were substantially fewer than with most vehicles of this weight. Not that there could be any aversion to using the gearbox when necessary, for the combination of light clutch-pedal action and the positive but non-baulking synchromesh on the four upper ratios of the standard A.E.C. gearbox made of this act of driving as light a chore as it is ever likely to be in a stepped countershaft transmission.

Baulking in the approach to our measured quarter-mile on Purley Way prevented a speedometer check at 30 m.p.h., but a stop-watch measurement was made at 20 m.p.h., at which

was allowed to accelerate to the maximum run up of the governor, when 52-53 m.p.h. was recorded on the speedometer, and at this speed it proved commendably stable, even when the steering was swung from side to side. Two hard brake applications (60 per cent on the Don meter), one on the bend just above the roundabout, produced fully controlled deceleration without pulling or wheel locking. On nearby Bug Hill an easy restart on the 1 in 6 gradient was made in first gear and although this driver failed in two attempts to change from first to second as the gradient eased slightly before all forward momentum was lost, there proved to be sufficient power for a complete restart in second gear on 1 in 7½.

### Good Fade Resistance

The Mercury Mark II is provided with nearly 43 sq. in. of lining area per ton of gross weight and as usual when area is adequate and a good-quality anti-fade lining is fitted, little trouble is to be anticipated from brake fade. In our rather harsh test, in which the vehicle is coasted for about half a mile down Titsey Hill while speed is held to 20-25 m.p.h. on the footbrake, a smell of heated resin was wafted into the cab, but an emergency application near the foot of the hill produced a Don meter reading of over 40 per cent and brought

(Continued on page 14)

## COMBINED TRAMS AND BUSES

A Flashback to Early Days

### HAWORTH SYSTEM IN Salford

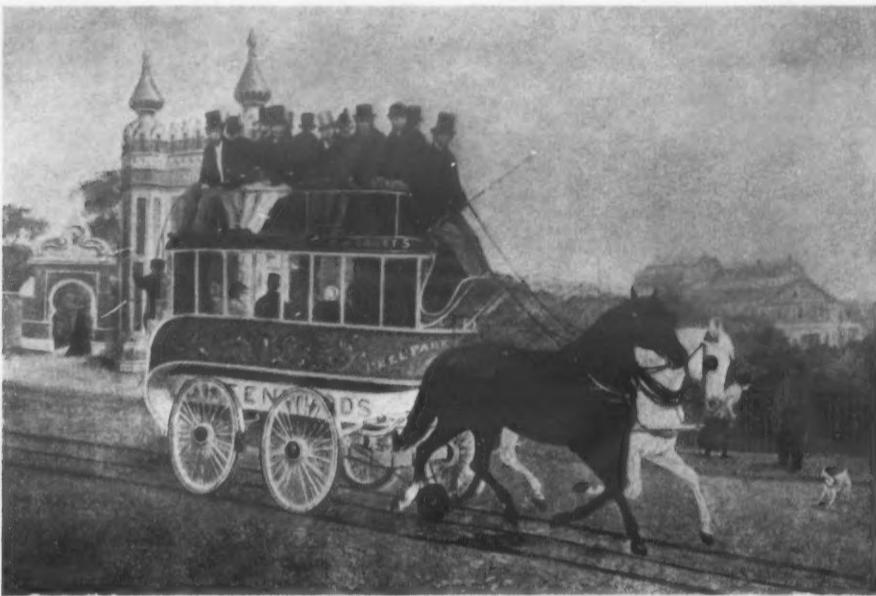
**N**OW that the tramway, as a means of urban street transport, is drawing to its last stages in this country it is interesting to notice that many early progenitors of railed street transit systems realised the limitations and rigidity of the railed track and tried to find means for combining the low tractive resistance of rails with freedom to go beyond the tracks if required.

Alphonse Loubat, a Frenchman who was engaged on tramway construction in New York about 1850, returned home in 1852 full of the new idea of what the French were to call the *chemin de fer américain*. He sought permission to build a line from the village of Boulogne and from the Pont de Sèvres right through Paris to Vincennes. The authorities would not, however, grant permission to

tramway idea in England over several generations. Despite lines at Portsmouth and Ryde (for the benefit of through passengers to the Isle of Wight rather than for local business) in the early sixties the town tramway idea did not pick up until the Tramways Act of 1870 and then under crushing burdens of responsibility for the road surface and the threat of compulsory purchase by the municipal authorities in 21 years.

#### Haworth in Salford

In the meantime one more tram-bus scheme was propounded and scored some success. It was grandiloquently named "Haworth's Patent Perambulating Principle" and was put forward in Salford by John Greenwood of Pendleton, a bus proprietor.



By courtesy

Painting of Greenwood's "five-wheeled bus"—Haworth's "patent perambulating principle" for buses on tramrails—as used in Salford, 1861-1866, on a Pendleton—Peel Park—Market Street route

[Salford City Art Gallery]

proceed east of the Place de la Concorde, where-as the nearest natural traffic centre was the Louvre. Realising this he built tram-bus type vehicles which, from the opening in 1853, followed the rails from his western terminus at Passy to a change-over point by the Place de la Concorde; thereafter the vehicles, with the wheel flanges detached, reached the central area as buses.

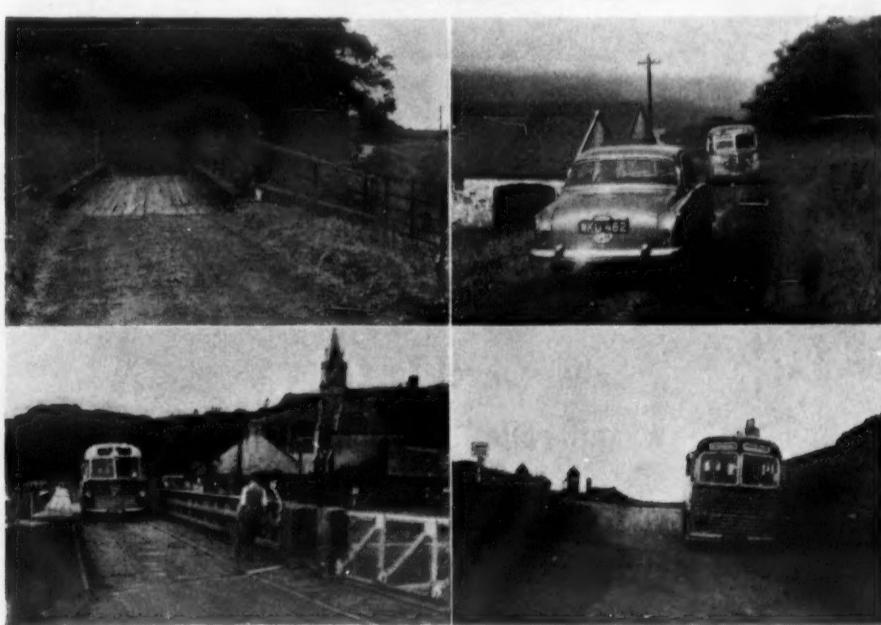
#### The Curtis System

An English inventor, William Joseph Curtis, who had patented a gripper device for cable traction as long before as 1838, saw the apparatus in use and promptly decided to improve on it. His first vehicle was the pioneer tramcar in Britain and ran in 1859 on the Mersey Docks and Harbour Board tracks along the line of docks in Liverpool. Curtis does not seem to have been entirely successful as a business man; against the jobmaster who worked his car and other imitators he appears to have been no match and in any event the tram proprietors were soon warned off because they were obstructing the Harbour Board's ordinary business. In London he proposed a line along Liverpool Road and actually had his rails on site awaiting laying, but it appears that the slick tongue of George Francis Train, the American who always claimed he introduced street tramways to Europe (although he arrived on the Liverpool scene only as Curtis and his rivals were having to cease operations) easily ousted Curtis in the counsels of the London vestries and no more was heard of his system.

This was probably a pity, because Train insisted on using a step rail which projected above the ordinary level of the paving and caused a good many spills to other traffic. For this and other reasons his three London tramways (Bayswater Road, Victoria Street and Kennington Road) had to be torn up after very short lives. The grand opening at Marble Arch was on March 23, 1861, and the last car ran on the Kennington line on June 21 of the following year. Unfortunately Train left an aurora of ill-will that worked against the

The scheme was considered and approved by Salford District Highway Committee and was accepted by the Salford Borough Council (as it then was) on March 27, 1861. An agreement with Greenwood and Haworth was made in August for an "iron tramway" from Cross Lane via Windsor Bridge, Crescent Parade, Bank Parade, Whitecross Bank, Chapel Street and New Bailey Street to Albert Bridge. Mr. Greenwood also obtained permission from the Pendleton Turnpike to lay a double track from his Omnibus Office via Broad Street to the Salford—Pendleton boundary, thence to the corner of St. Stephen's Street and by single track to Albert Bridge.

Each line consisted of three rails, all of which were level with the surface of the street. The outer rails were 3 in. in breadth and the centre one, 2½ in. wide, carried in its centre a groove  $\frac{1}{8}$  in. wide to take the "perambulator" or guide wheel. By means of the guide wheel, which was retractable, the wheels of the omnibus were kept on the outer rails without resorting to flanges. On retracting the guide wheel the vehicle was able to run just as an ordinary bus. Our illustration of this little-known five-wheeled bus venture is from a painting in Salford City Art Gallery (by kind arrangement of the director, Mr. A. Frape) and is dated 1861-66. The picture is by an unknown artist; it was formerly in the possession of a relative of Greenwood, Mr. James Addison, whose granddaughter, Miss E. R. Challinor, presented the painting to Salford City Art Gallery in 1942. We are much indebted to the courtesy of Mr. Charles Baroth, general manager and engineer, Salford City Transport, for details of the Haworth tram-omnibus route. The difficulty found with all such schemes while horse traction prevailed was presumably the varying amount of tractive effort required. A two-horse bus seldom exceeded 26 seats in capacity, whereas two horses hauling a tram could shift a vehicle with 46 seats owing to the reduced rolling resistance of steel wheels on steel rails. The hybrid vehicle fell between two stools in this respect.



Problems of the backward state of roads in the crofting counties of Scotland are well illustrated in Argyllshire: A bridge on B8024 near Achahoish; MacPhail's Bedford bus meets a private car near Ballycargan on Loch Caolisport en route to Kilberry; below, an East Yorkshire Leyland Royal Tiger coach crosses the Crinan Canal swingbridge at Ardriahig when returning from the Mull of Kintyre; and, right, McConachie bus from Campbeltown at the Machrihanish terminus. It is a Leyland Royal Tiger with 41-seat Duple body.

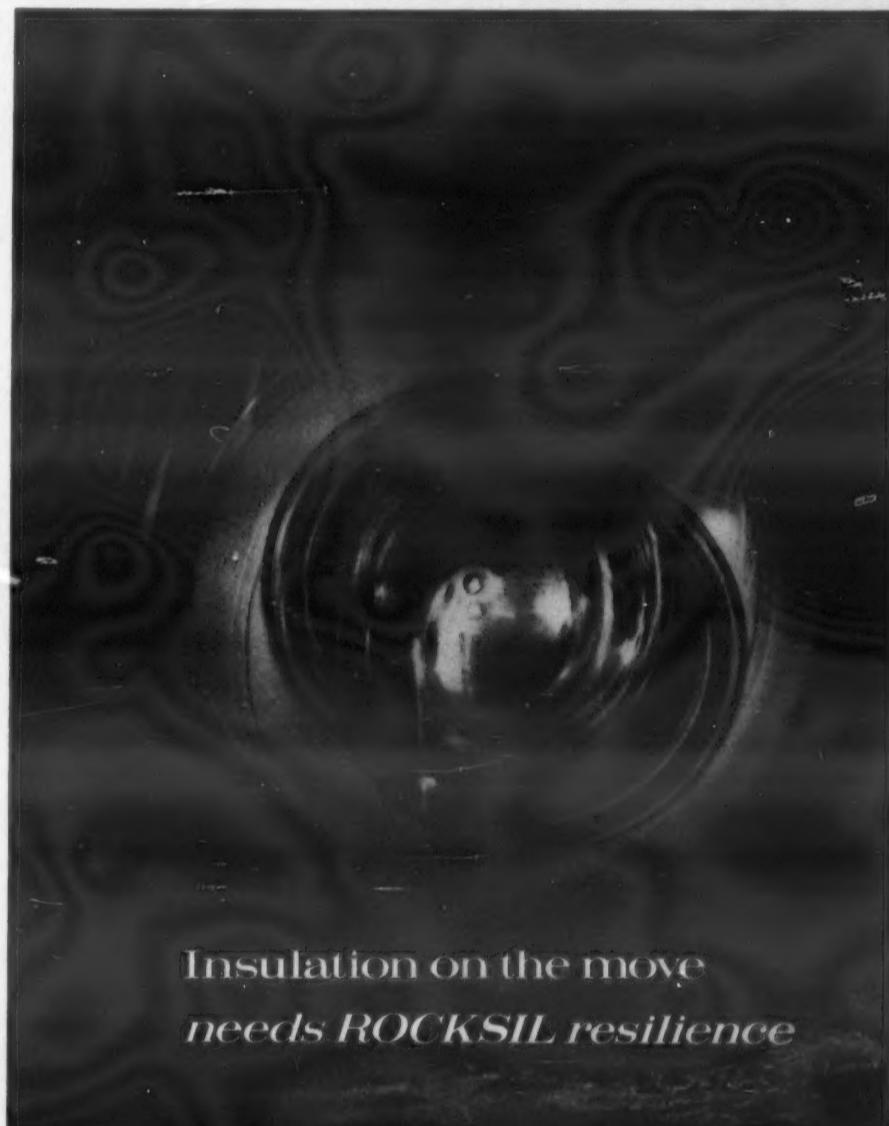


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## LETTERS TO THE EDITOR

### Modern Coal Depots

SIR.—The description of the Walworth Road coal depot in your issue of October 17 may lead others concerned with the design of modern coal-handling plant to believe that this system is one that is suited to conditions generally. Judging only from the description and diagrams it falls short of modern requirements in the following ways:

1. The hopper capacity above each sack filling point is very small.
2. Yet the only way of feeding the hopper is from wagon.
3. If there is any storage on the ground it can only be loaded by hand in the old slow way.
4. There is no provision for mechanical screening or debreezing.

The solid-fuel trader today has to meet a very high peak demand. If the merchants at Walworth Road are enabled to meet this peak it can only be done by diverting current supplies from other coal depots to them. The merchant may have arranged to have heavy stocks at other depots but they are unlikely to be in this neighbourhood. It follows therefore that while the tonnage of coal flowing to Walworth Road must be multiplied by four, five or six in the winter, the tonnage to other destinations will be reduced. Surely this cannot be good economics for the railway who, above all things, wish to have as regular a flow as possible throughout the year to each destination?

The merchant also has a problem because of the variation in his orders from week to week, even in the winter. He may have ordered heavy supplies to meet immediate needs. In the time that elapses before the wagon reaches him the demand drops; what else can the merchant do but leave the wagon to stand loaded somewhere on the route until his trade picks up again?

The principles upon which a modern fuel depot should be established are:

1. Fuel should flow into the depot throughout the year at a fairly steady rate.
2. It should be possible to empty wagons into stock so that it does not matter whether arrivals exactly match sales.
3. It should be equally easy to bring fuel out of stock with a system which would give a high rate of sack filling.
4. All fuel should be passed over mechanically operated screens.

The Walworth Road depot fails to meet any of these basic requirements and I can only surmise that it was reconstructed on the old 19th century pattern because of peculiar local requirements. Moreover it does not appear to have been cheap. Although no capital cost is given, if anything like the figure mentioned, it is very high on a "per ton of throughput" basis.—Yours faithfully,

H. L. WARREN.

Thorpe Close,  
Hemingford Grey, Huntingdon.

### The Rural Bus Problem

SIR.—Referring to the letter from Brigadier Sir H. Osborne Mance in your November 14 issue, may I add that one amendment to the Road Traffic Acts which would make sense and help the rural operator would be the licensing of the contract carriage, by the issuing of permission to operators to carry out such work. Thus the cut-throat private-hire operator, and the man with a coach for hire, quite uneconomically, on odd

occasions, would be eliminated, and the established local stage operators would get the private hire business. School and other official contracts should be placed for a five-year period, to give the operator security of tenure sufficient at least to finance the purchase of vehicles for the work.—Yours faithfully,

ERIC N. OSBORNE.

### T.R.T.A. Survey

SIR.—On first reading Mr. B. A. Coulson's letter in your issue of November 14, I wondered what he was trying to establish, but it would seem that he is suggesting that if certain adjustments were made in the T.R.T.A. Survey figures "speed of delivery and certainty of timing" would be shown to be even more significant as a reason for using C-licensed vehicles in preference to rail than Table 3 actually shows. This is undoubtedly the case and if a vote had been taken separately in respect of vehicles which he would regard as competing with rail the percentage would of course have been much higher. He adds that if this had been done that "part of the survey would then have clearly been seen in its true light—as a subjective expression by the C-licence operator of confidence in his own efficiency."

I should not have thought a survey was necessary to establish that C vehicle users are satisfied that they operate them efficiently. They happen to be engaged in businesses operating for profit. To make a profit in this competitive world calls for efficiency throughout a business. It would seem that Mr. Coulson is surprised to learn that so many C-vehicle operators use their own vehicles instead of rail to secure "speed of delivery and certainty of timing." If he consults the annual reports of the B.T.C. he will find the Commission is well aware of that need, and one of the objectives of the modernisation plan is to meet it far better than the railways do at present.

We lay no claim to perfection in the survey, but it was quite a job getting it together, and all we do say is that it is an honest attempt on our part to meet a long-felt need. The figures themselves are not biased, and they have not been juggled with to produce any desired effects. It is our claim that C-licence holders generally know what is best for them. On this we may be biased, but we suggest that the survey goes a long way to prove our point.—Yours faithfully,

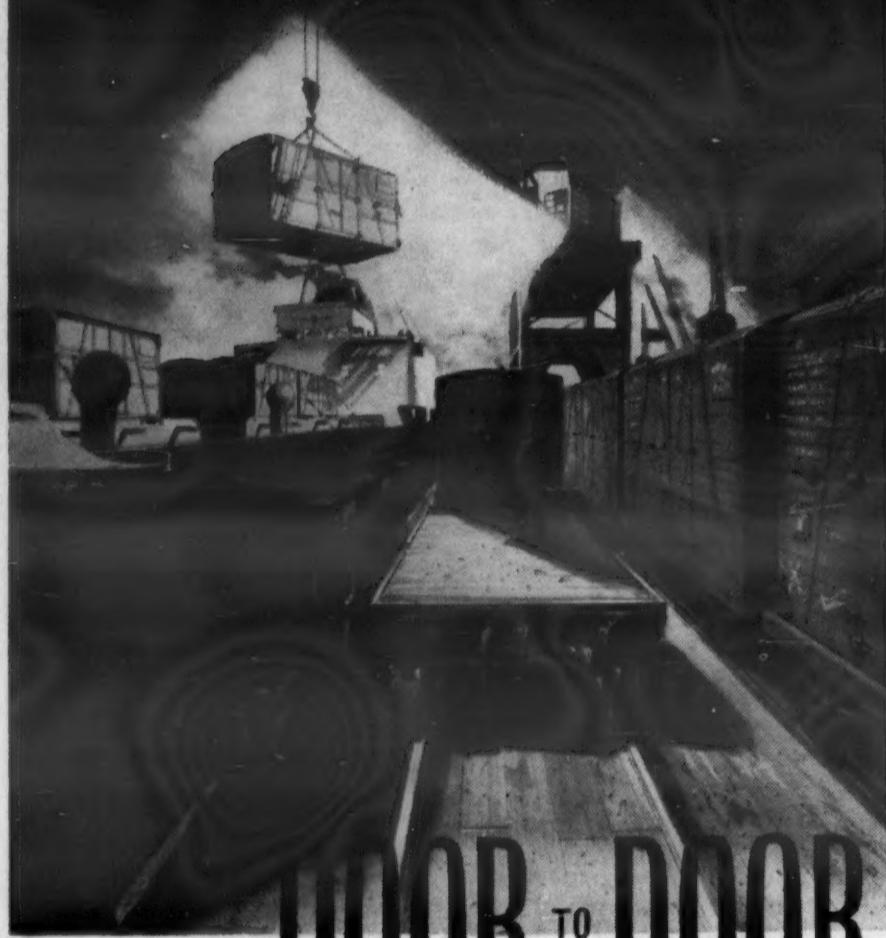
F.D.K. D. FITZ-GERALD,

Secretary,

Traders' Road Transport Association,  
Roadway House,  
146 New Bond Street, W.1.

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

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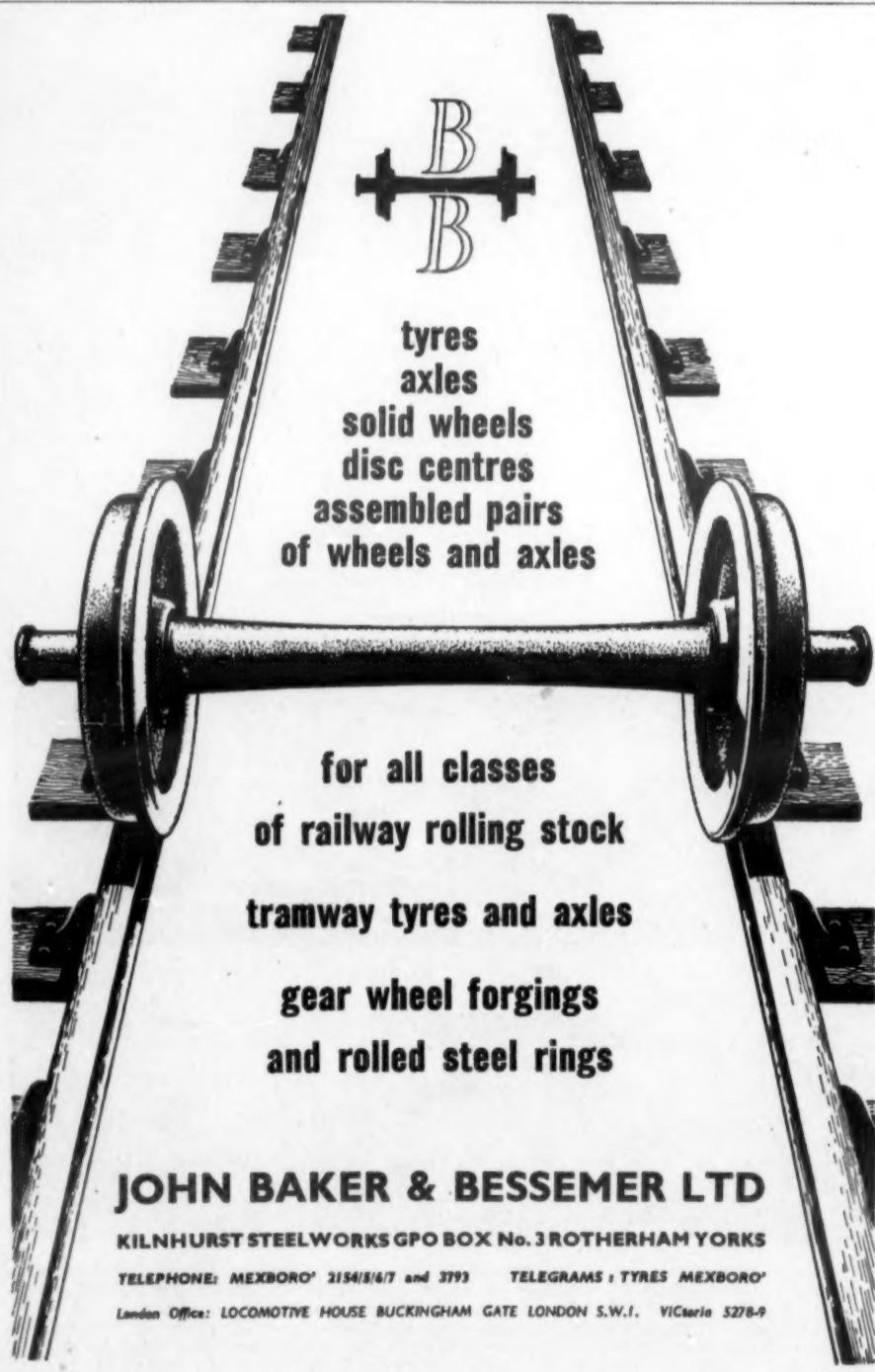
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## ROAD VEHICLE INDUSTRY

### New Leyland Range Planned

A RECENTLY completed 16,000-mile tour of African markets undertaken by Messrs. D. G. Stokes and J. McHugh, respectively general sales and service manager and chief engineer of vehicles, Leyland Motors, Limited, is to result in a new range of Leyland vehicles, which will shortly be taking shape on the drawing boards of the company's design department. The journey was the culmination of an extensive market survey carried out by various members of the Leyland staff over a number of years to assess the vehicle of the future most suited to African road and climatic conditions. The trip made by Mr. Stokes and Mr. McHugh was to round off this project and verify many of the facts in previous reports before final designs were planned. In this connection, visits were made to many operators of Leyland and Albion vehicles, including the companies responsible for supplying transport for the Kariba dam project.

Two common enemies of road transport in Africa are repetitive road corrugations, which can have a cumulative detrimental effect on a vehicle, and excessive dust which can eventually find its way into engines, gearboxes and axles. Various methods of filtration are being tried to overcome the problem. Typical African road corrugations, reproduced in concrete and built in the form of circular track adjacent to Leyland's research department, have been used for some time for experiments on various types of suspension. From data collected, Leyland hopes to keep ahead in the African market, which has been the company's best customer during the past four or five years. A network of over 30 Leyland and Albion depots has already been established in Central and Southern Africa with a spares stock holding of £2 million.

#### New Holt Products

RECENTLY added to the wide range of chemical preparations invaluable to vehicle operators manufactured by Holt Products, Limited, were two new items, Speedflush and Thixotropic Rust Remover Paste. Speedflush is a low-priced cooling-system cleanser in powder form that quickly removes grease, oil, sludge and other

out the interior, more than a hundred pieces of Vybak decorative rigid p.v.c. sheet are used as trim around the windows.

#### Aid to Gudgeon Pin Removal

REMOVAL of gudgeon pins from pistons is greatly facilitated by use of a new electric heater introduced by Eltron (London), Limited. The heating element is in the form of a coil, which is held over the piston for a few minutes so that the piston expands away from the pin as it heats up. The loading of the Eltron heater is 450 watts and it costs £4 15s.

#### Notek Portable Warning Light

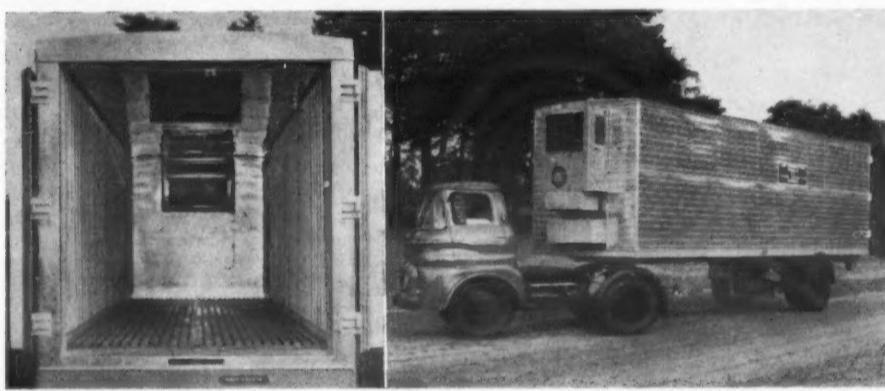
NAMED Flaremaster, a portable warning light introduced by Notek Electric Co., Limited, could greatly reduce the risk of the type of accident, all too common recently, in which moving vehicles collide with broken-down vehicles or other obstructions. The new light is self-contained, being battery powered, and gives a regular red flash said to have a range of 1,000 ft. It costs 83s. and is compact and sturdy enough to be carried as regular equipment in a commercial vehicle.

#### National Replaces Dominion

REGULAR-GRADE motor spirit has been introduced by the National Benzole Company in the consumer trade market under the brand name National. It will replace Dominion petrol which National Benzole has previously marketed in this field as agent for the Dominion Motor Spirit Company. This marks a further step in the expansion of the National Benzole Co., Limited, which after 40 years in the motor fuels and lubricants trade, last year added gas oil for heating and industrial use to its range of products.

#### Dual-Purpose Bulk Delivery

A BULK delivery vehicle, based on a six-wheeled Albion Reiver chassis, which can carry 9 tons of grain or about 6½ tons of flour, has been placed in operation by Spillers,



Features of this 25-ft. refrigerated semi-trailer now in production by Mann Egerton are a usable capacity of about 1,000 cu. ft., a compact Thermo King refrigeration unit claimed to be only half the size of normal similar equipment, fully automatic control, power supply by petrol motor or electric mains through single changeover switch and a temperature range down to minus 20 deg. F.

impurities, which are often the cause of overheating troubles and might cause foaming when anti-freeze is installed. Speedflush is packed in 13-oz. tins, sufficient for coolant capacities up to 5 gal. The new rust remover is in paste form having a thixotropic quality that is advantageous when used on vertical or sloping surfaces from which a liquid would run too freely. It is packed in 4-oz. and 12-oz. polythene bottles incorporating spreaders under the sealing caps.

#### Oldham Lively O Batteries

INTRODUCED recently by Oldham and Son, Limited, was a new economy-class battery under the name of Lively O. These batteries are intended for the marginal user who wants a good-quality new battery from a reputable supplier. They are now available through the 400 Oldham service agents throughout the country and are additional to the Oldham range of heavy-duty batteries.

#### Useful Booklet on Tyre Performance

JUST published by India Tyre and Rubber Co., Limited, Inchinnan, Renfrew, is a most informative and useful booklet entitled *Facts About Tyre Performance*. The publication is issued as part of the company's service to commercial vehicle users and traders. It describes the functions of a tyre, the effects of different types of road and service on tyre life and methods of determining loads and gives much good advice on tyre maintenance and driving.

#### Guy Small Bus

INITIALLY designed for overseas use but with a potential market at home for bus feeder services and small coach parties, a new single-deck passenger chassis has been introduced by Guy Motors, Limited. Named Seal, the new vehicle is powered by the Perkins Six 305 5-litre diesel engine mounted under the floor. The chassis has a wheelbase of 11 ft. 6 in. and a turning circle of 47 ft.; it weighs 2 tons 9 cwt. Orders from Portugal and Benelux countries have already been placed for the Seal.

#### Plastics in the Routemaster Bus

IN London Transport's new RM type buses, which are now entering service in increasing numbers, extensive use is made of plastics in both bodywork and internal fittings. Several of the external body parts are made from Bakelite polyester resin reinforced with glass fibre, including the distinctive double-skin curved bonnet top, which has the red colour moulded in. Like the other body parts of reinforced plastics, it is made by Cascelloid Division of the British Xylonite Co., Limited, from Bakelite polyester resin. Other reinforced plastic parts are the radiator surround with integral number-plate housing and the upper deck emergency door, which has a specified tolerance of only 1/32 in. in a width of 4 ft. Inside the bus at the front of the lower deck is a heating and ventilating trunk of reinforced resin and through-

Limited. It comprises a light alloy Bonallack tipping body, 15 ft. long, 7 ft. 6 in. wide, and 7 ft. high, for carrying grain, which can also hold a special cylindrical container for flour. This container is also constructed from light alloy and has a capacity of 462 cu. ft. During pre-delivery trials, the vehicle discharged about 6½ tons of flour 40 ft. vertically and a further 40 ft. horizontally in 22 min., a rate equivalent to 19 tons per hour. Discharge over 125 ft., which included 60 ft. vertical lift, was also accomplished. The outer body has Edbro-B. and E. tipping gear for discharge and an alternative method of emptying through apertures in the floor.

#### Smarter Number Plates

PERMANENT reflecting properties or brilliant whiteness are claimed to be features of two new types of letters and numerals for vehicle registration plates introduced by PAN (Plastic Adhesive Numerals), Great Horsted, Colchester, Essex. Reflecta is the name applied to the reflecting letters while the extreme white letters are named Whita. Both types are easy to apply either to an existing metal number plate or to a self-adhesive black plastics background also supplied by the company, which obviates the use of a number plate and the need to drill holes.

#### Leylands for Ireland's Transport Museum

AMONG vehicles which the Transport Museum Society hopes to include in a museum to be established in Dublin are a 1921 Leyland fire engine, a 1930 Leyland Tiger single-deck bus and a 1937 Leyland Titan TDA double-deck bus. Restoration work has already started on the Titan double-decker, number R1 of the fleet of Coras Iompair Eireann. Supplied to Dublin United Tramways Company in 1937, this bus was in service until September, 1956. The chassis is fitted with an 8.6-litre 100-b.h.p. Leyland diesel engine and the metal-framed body has 58 (originally 56) seats. It will be repainted in the colours of the former D.U.T. company.

#### Ford Expansion

AS part of its £75 million modernisation and expansion programme, Ford Motor Co., Limited, has acquired from Hawker Aircraft, the former aircraft factory at Sutton Lane, Langley. A large part of this factory has been rented by the parts division of Ford Motor Company since 1948 and has been used for the reconditioning of engines and the manufacture of spare parts. The Langley plant is housed on a 57-acre site and will provide a manufacturing floor area of 733,000 sq. ft. At present only 333,000 sq. ft. is being used and a further 7 acres of the site is still available for development. When complete more than £34 million will have been spent on this plant. With the completion of the purchase, work is now going ahead to utilise as quickly as possible the extra floor area now made available.

*Announcing*

*the new "IMEX" rivet*

#### A NEW BLIND RIVET

#### WHICH IS WATERTIGHT

Incorporating all the existing advantages of the well-known "Pop" Rivet, the "Imex" Rivet offers tremendous new advantages in assemblies where a gas- or water-tight joint is essential.

The "Imex" Rivet is now available in a limited range of sizes, including  $\frac{1}{8}$ " and  $\frac{1}{16}$ " dia. It can be supplied on two alternative mandrels which only break after the rivet is fully set. The short break mandrel fractures immediately under the head, which is thus retained within the set rivet. The long break mandrel fractures outside the rivet and its protruding part can be subsequently trimmed to give an entirely flush finish and a solid steel core to the rivet.



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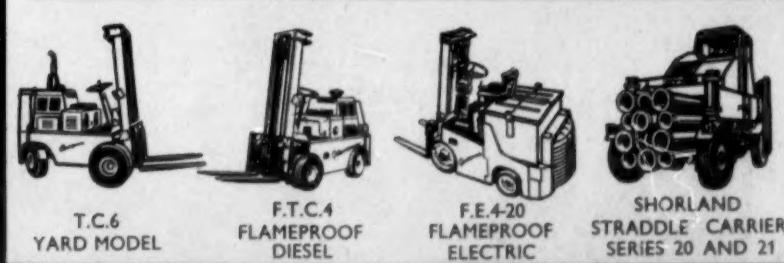
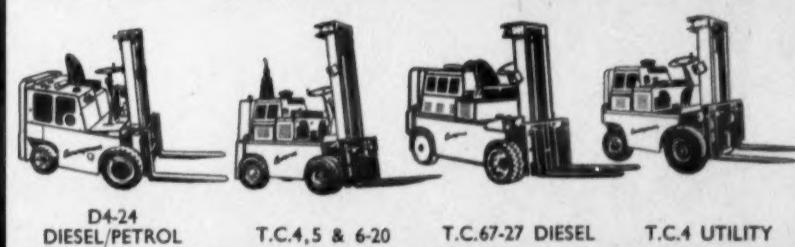
The Trade Mark "IMEX" is registered in respect of rivets in the United Kingdom and many other countries in the name of the Geo. Tucker Eyelet Co. Ltd.



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The Conveyancer range covers almost all aspects of Materials Handling—Petrol; Diesel; turbo-transmission and Electric fork lift trucks in capacities ranging from 2,000 lb. to 7,000 lb.; Flameproof and L.P. Gas versions; Reach Trucks; attachments specially developed for all industrial applications; Lifting platforms in 2 ton to 10 ton capacities; Hopper loading units; Hand Trucks; "Shorland" range of Straddle Carriers and the latest editions to the Conveyancer range, Scotts electric vehicles; electric towing tractors and fixed and elevating platform models.

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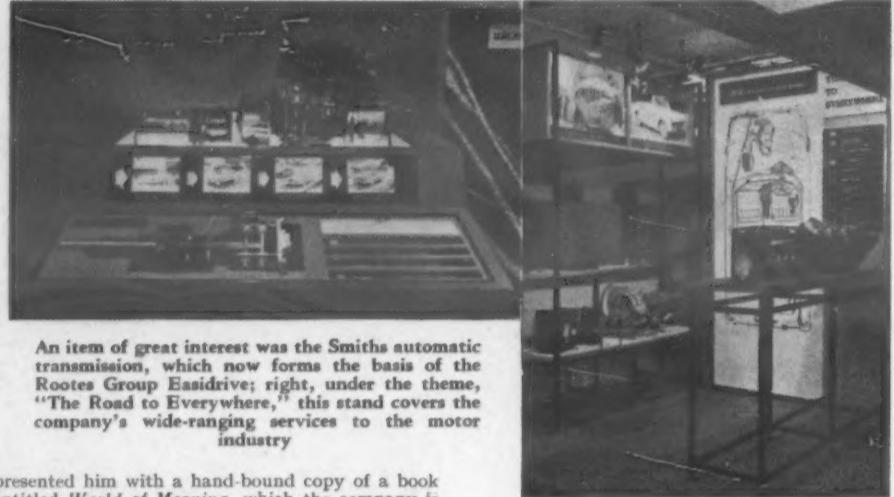


Write now for  
Catalogue 45/GP.1

**SMITHS CENTRE****New Facility Opened by Duke of Edinburgh**

**O**PENING a new centralised information centre at the Cricklewood works of S. Smith and Sons (England) Limited, last week, H.R.H. the Duke of Edinburgh said that having looked round the exhibition he had come to the conclusion that there were very few things made by the company that he had not used; it had been very interesting to see them displayed and to see some of them being made in his earlier tour of the Cricklewood factory. Mr. R. Gordon-Smith, chairman of the company, thanked His Royal Highness and

range of products from every side of the business, grouped in their specific industries or applications. The centre also provides a historical panorama of the growth of the Smiths organisation and a broad detail of the products made in its 26 factories in England, Scotland and Wales. A fully equipped projection box spans the central section of the centre and seating accommodation is available for sales conferences, demonstrations, press receptions and other functions. The centre houses a permanent exhibition, always changing and always



An item of great interest was the Smiths automatic transmission, which now forms the basis of the Rootes Group Easidrive; right, under the theme, "The Road to Everywhere," this stand covers the company's wide-ranging services to the motor industry

presented him with a hand-bound copy of a book entitled *World of Meaning*, which the company is shortly to publish.

The Smiths Centre occupies an area of 4,000 sq. ft. and has been designed to show a selected

up to date, and includes many special displays.

The main exhibit of the Smiths Motor Accessory Division is a full-scale sectioned working model of Smiths new automatic transmission, claimed to be the first fully automatic transmission in the world suitable for the medium-sized car, because there is no more power loss through the system than through a conventional gearbox. Two main features of considerable importance in the transmission are ability of the driver to override the fully automatic operation and the maintenance of continuous engine torque at the road wheels during all up-changes.

These features result from the use of two magnetic couplings in place of the conventional friction clutch, having the unique capability of combining the consistently smooth engagement of a fluid coupling with the negligible drag when released and solid lock-up when engaged of the dry friction clutch. No other coupling device at present known combines these virtues. Designed as an electro-mechanical system, operation of the transmission relies on an automatic governor which is sensitive to vehicle road speed and accelerator pedal position. By suitably integrating these the governor dictates selection of the optimum gear ratio to suit driving conditions. Smiths automatic transmission forms the basis of the Easidrive currently fitted optionally in Rootes Group medium-powered cars.

**Air Conditioning**

From the earliest days of motoring, Smiths instruments have featured on the car dashboard. In the new centre a dashboard panel for future vehicles is displayed, containing in addition to a full range of instruments, a radio and air outlet grilles to the vehicle interior and windscreen for full air conditioning requirements; the controls associated with the air-conditioning unit are also incorporated. A heating and ventilating unit is also on show to represent the 3½ million Smiths vehicle heaters in use today. The Smiths mobile laboratory coach, in which many heaters have been tested, is featured in one display during an expedition to Scandinavia, one of many expeditions undertaken to ensure heater efficiency.

Other displays include those for electro-hydraulic automatic hood raising and lowering equipment and K.L.G. sparking plugs, including a new one-piece plug employing a new method of production known as hot crimping.

**MERCURY MARK II TEST**

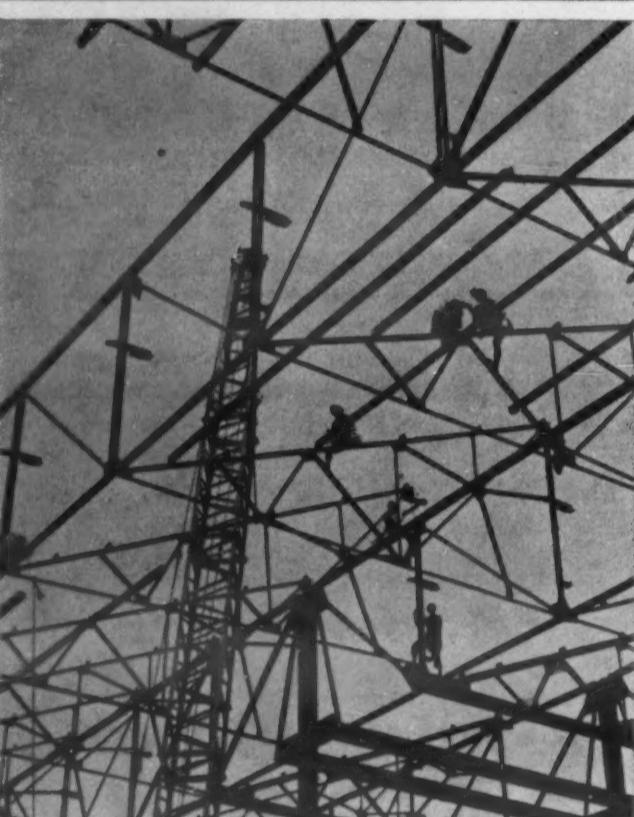
(Continued from page 10)

the vehicle to rest in a reasonable distance on the steepest part of the hill. Full cold-brake efficiency had returned when a further application was made after running at normal speed for about a mile.

The roads had dried out sufficiently in the afternoon to make a series of stops, measured by our chalk-firing magazine, on a fairly level section of the Orpington Bypass. In these the shortest distance recorded from 30 m.p.h. was 52 ft. and the longest 58 ft., the latter on a slight downgrade on which the off-side rear wheel locked on a polished surface. In these stops consistent Don meter readings within a point each side of 65 per cent were recorded. Hard application of the handbrake alone produced a meter reading of 26 per cent.

The main fuel consumption check was made over our standard 15-mile out-and-back route on A25 between Limpsfield Common and Riverhead, passing through the villages of Westerham, Brasted, Sundridge and Bessels Green. The resulting consumption of 12 m.p.g. at 27.3 m.p.h. average speed was well up to average for a 14-ton-gross vehicle but is in fact rather under what we would expect the vehicle to do in all fully-laden trunk service on not-very-open roads, for A25 was more than usually difficult during this run, traffic conditions and road works necessitating no fewer than five complete halts.

An indication of probable returns from a Mercury operated at unrestricted speeds on motor roads was afforded in a later run over the Orpington Bypass. Here, with a fair general gradient in one direction, the vehicle returned a fuel consumption of 12.5 m.p.g. at an average speed of 40.5 m.p.h. Though already an outstanding performer in maintaining high average speeds with a full load, no doubt future Mercury operators would appreciate an overdrive gear for operation on motorways. Overdrive would transform an already excellent gearbox and ratio spread into a completely ideal transmission for these conditions. Overall fuel consumption, covering 105 miles of fully loaded and consistently hard driving, which included about 30 miles of London suburbs and the numerous stops and full-power low-gear work in our various checks, worked out at 10.25 m.p.g.



**LOCATION—**  
**Durgapur—India**

In course of erection is shown the lattice girders and roof trusses to the Light and Heavy Machine Shops and Loco Repair Shops for the Central Engineering Maintenance Department of the Durgapur Steel Project.

These form part of one of the several buildings of which the steelwork has been designed, fabricated and erected by CLEVELAND.

*Construction by* **CLEVELAND**



THE CLEVELAND BRIDGE & ENGINEERING CO. LTD. DARLINGTON, ENGLAND.

## SOCIAL AND PERSONAL

### New Chairman of Tilling Group

THE new chairman of the Tilling Group management board of the B.T.C., to follow Mr. Stanley Kennedy, is to be Mr. Maurice Holmes. Mr. Kennedy retires on March 31 next year; Mr. Holmes is at present a member of the board and chairman or director of several Tilling Group bus companies.

\* \* \*

The late Mr. Alex Fraser, former vice-chairman and managing director of Girling, Limited, left £32,073 net (duty paid £6,307).

\* \* \*

Mr. A. H. Bates has been appointed by Ghana Airways, Limited, as London representative. He has been seconded from B.O.A.C.

\* \* \*

Mr. H. L. Ellis, A.C.A., at present secretary of the Western and Southern National bus companies, has been appointed general manager of both, with effect from January 1 next.

\* \* \*

Mr. V. Martin-Jones has succeeded Mr. A. L. Stock as chairman of the board of Lodge Plugs, Limited. Mr. F. E. V. Spencer is appointed managing director and Mr. John Walker is elected a director. Mr. Walker is also a director of the Morgan Crucible Co., Limited.

\* \* \*

Mr. James Calderwood, M.Sc., M.I.Mar.E., M.I.N.A., A.F.R.Ae.S., who has been elected president of the Diesel Engineers and Users Association,

received his early training with Swan, Hunter and Wigham Richardson, Limited, and at Armstrong College (now King's College), Durham University. Towards the end of the 1914-18 war, he served as an engineer officer on rigid airships in the R.A.F. His first civil appointment was as assistant to the technical manager of Swan, Hunter and Wigham Richardson, Limited. In 1954 was appointed chairman and managing director, Brush Electrical Australia, Pty., Limited, and chairman of British Oil Engines Australia, Pty., Limited. Mr. Quarrell, who returned to England in 1958, has travelled extensively in North and South America and the Middle East. He has served two years as an associate member of council of the Institute of Marine Engineers.

\* \* \*

Captain E. A. Shergold, general manager, Canadian Pacific Steamships, Limited, Liverpool, since 1952, is retiring on November 30 after 42 years' service, mainly at sea. He will be succeeded by Captain R. V. Burns, G.M., at present general superintendent for the company, with headquarters in Liverpool.

\* \* \*

Mr. R. A. Savill, A.M.Inst.T., has been appointed district commercial officer, Sheffield, Eastern Region, B.R.

\* \* \*

Brigadier C. A. Langley, Chief Inspecting Officer of Railways, Ministry of Transport, is visiting India, as foreshadowed in MODERN TRANSPORT. He was due to leave London on November 27 for New Delhi and Simla. He is to discuss safety problems and other railway matters with the Chief Government Inspector of India Railways, Mr. Desai, and officials of the Ministries of Railways, Communications and Scientific Research. Next month he will attend the enlarged meeting of the Permanent Commission of the International Railway Congress Association in New Delhi.

\* \* \*

The Minister of Transport has appointed Mr. J. Hancock, a nominee of the British Transport Commission, to be a member of the London Area Transport Users Consultative Committee and of the East Anglia committee. Mr. Hancock is commercial officer at the traffic headquarters of the south-western committee has a new member, Councillor H. Picken, a member of Exeter City Council and chairman of its Transport Committee, and the Wales and Monmouthshire committee Miss Olive Turpin, M.B.E., county organiser for Denbighshire of the Women's Voluntary Service.

\* \* \*

The annual dinner of the Humberside section of the Institute of Transport took place at the Guildhall, Hull, on November 11. The president, Mr. Reginald G. Grout, responded to the toast, "The Institute," proposed by Mr. G. E. Sanderson, president, Hull Incorporated Chamber of Commerce and Shipping. Mr. J. Pickering, chairman of the section, who presided, also proposed the toast "Our Guests," and the response was given by Mr. W. H. Vine, chairman of the Yorkshire section. At the annual dinner of the Midland section at the Queens Hotel, Birmingham, on November 13, the president again responded to the toast "The Institute," proposed by Mr. E. J. Dodd, Chief Constable, City of Birmingham. The chairman of the section, Mr. T. Hayes, who presided, proposed the toast "Our Guests" to which the response was given by Mr. J. A. Gordon, A.F.C., Commandant, Elmdon Airport.

\* \* \*

Seen at a Power Petroleum reception during the Scottish Motor Show—Messrs. F. M. Walton, sales director of the company, D. J. Brenton, its Scottish divisional manager, and W. Dodds, the Ayrshire bus and coach operator, and chairman of the P.V.O.A. Scottish area

\* \* \*

Mr. S. W. Smith, at present traffic assistant to the divisional traffic manager, London, has been appointed assistant divisional traffic manager, Manchester, London Midland Region, B.R. Mr. Smith joined the L.N.E.R. in the chief accountant's department and in 1933 was appointed a traffic apprentice. In 1951 he became a traffic costing officer and in 1955 was transferred to the secretariat of the area management costs and statistics panel at the B.T.C., becoming its secretary in 1957. His last appointment dated from March, 1958.

\* \* \*

Two Western Region occasions: left, Admiral Sir Charles Lambe, First Sea Lord, unveils the nameplate "The Royal Naval Reserve, 1859-1959" on diesel-hydraulic locomotive D.812 at Paddington—on the left are Mr. K. W. C. Grand, Sir Brian Robertson and Mr. R. F. Hanks. On the right is Mr. Ernest Marples at Old Oak Common hostel and canteen. With him (l. to r.) are Messrs. S. R. Lewis, Mrs. Fry, Sir Brian Robertson, C. W. Powell, J. R. Hammond, S. G. Ward and H. R. Chubb



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### Institute of Road Transport Engineers

AT the 14th annual general meeting of the Institute of Road Transport Engineers, Mr. E. B. H. Elsbury was elected chairman. Mr. Elsbury is with the North Thames Gas Board, latterly as manager of the motor repair shop. He is also chairman of the joint study group for road transport materials handling, a body recently set up to study the design and construction of road vehicles to aid better materials handling.

\* \* \*

We regret to record the death last weekend of Mr. Frank Grundy, chief traffic officer of British Railways. A memorial service was held at Marybone Parish Church on November 26.

\* \* \*

British Transport Docks announces the appointment of Captain H. J. Pellow, assistant dockmaster, Southampton, to the post of dockmaster at that port in succession to Captain P. A. Morgan, who retires from the service on January 1, 1960.

\* \* \*

London bus and Underground staffs are staging their annual art show at Charing Cross Underground station until December 12. More than 114 oil paintings, water colours, drawings and ceramics will be on show to the public.

\* \* \*

The new secretary of the Diesel Engineers and Users Association, Mr. A. P. Quarrell, A.M.I.Mech.E., A.M.I.Mar.E., served his apprenticeship with British Marine Motors, Limited, joining Petters, Limited, in 1920, to become a director of that company in 1940. In 1944 he became one of the original directors of British Oil Engines Export, Limited, and of Associated British Oil Engines. From 1949 to 1951 was president and treasurer of Brush Oboe, Incorporated, the operating company of the Brush Group in U.S.A. In 1954 was appointed chairman and managing director, Brush Electrical Australia, Pty., Limited, and chairman of British Oil Engines Australia, Pty., Limited. Mr. Quarrell, who returned to England in 1958, has travelled extensively in North and South America and the Middle East. He has served two years as an associate member of council of the Institute of Marine Engineers.

\* \* \*

Mr. W. Smith has been appointed service engineer and factory representative for Simms Motor Units, Limited, in Australia and New Zealand.

\* \* \*

Captain E. A. Shergold, general manager, Canadian Pacific Steamships, Limited, Liverpool, since 1952, is retiring on November 30 after 42 years' service, mainly at sea. He will be succeeded by Captain R. V. Burns, G.M., at present general superintendent for the company, with headquarters in Liverpool.

\* \* \*

At its last meeting the board of the Railway Benevolent Institution granted annuities to four widows and one member involving an additional liability of £77 per annum; 105 gratuities were also granted amounting to £1,002 to meet cases of immediate necessity and grants made from the casualty fund during October amounted to £1,482. As from January 1, 1960, the new standard contribution to the casualty fund will be 2s. per annum.

\* \* \*

Brigadier C. A. Langley, Chief Inspecting Officer of Railways, Ministry of Transport, is visiting India, as foreshadowed in MODERN TRANSPORT. He was due to leave London on November 27 for New Delhi and Simla. He is to discuss safety problems and other railway matters with the Chief Government Inspector of India Railways, Mr. Desai, and officials of the Ministries of Railways, Communications and Scientific Research. Next month he will attend the enlarged meeting of the Permanent Commission of the International Railway Congress Association in New Delhi.

\* \* \*

The Minister of Transport has appointed Mr. J. Hancock, a nominee of the British Transport Commission, to be a member of the London Area Transport Users Consultative Committee and of the East Anglia committee. Mr. Hancock is commercial officer at the traffic headquarters of the south-western committee has a new member, Councillor H. Picken, a member of Exeter City Council and chairman of its Transport Committee, and the Wales and Monmouthshire committee Miss Olive Turpin, M.B.E., county organiser for Denbighshire of the Women's Voluntary Service.

\* \* \*

The annual dinner of the Humberside section of the Institute of Transport took place at the Guildhall, Hull, on November 11. The president, Mr. Reginald G. Grout, responded to the toast, "The Institute," proposed by Mr. G. E. Sanderson, president, Hull Incorporated Chamber of Commerce and Shipping. Mr. J. Pickering, chairman of the section, who presided, also proposed the toast "Our Guests," and the response was given by Mr. W. H. Vine, chairman of the Yorkshire section. At the annual dinner of the Midland section at the Queens Hotel, Birmingham, on November 13, the president again responded to the toast "The Institute," proposed by Mr. E. J. Dodd, Chief Constable, City of Birmingham. The chairman of the section, Mr. T. Hayes, who presided, proposed the toast "Our Guests" to which the response was given by Mr. J. A. Gordon, A.F.C., Commandant, Elmdon Airport.

\* \* \*

Seen at a Power Petroleum reception during the Scottish Motor Show—Messrs. F. M. Walton, sales director of the company, D. J. Brenton, its Scottish divisional manager, and W. Dodds, the Ayrshire bus and coach operator, and chairman of the P.V.O.A. Scottish area

\* \* \*

Mr. S. W. Smith, at present traffic assistant to the divisional traffic manager, London, has been appointed assistant divisional traffic manager, Manchester, London Midland Region, B.R. Mr. Smith joined the L.N.E.R. in the chief accountant's department and in 1933 was appointed a traffic apprentice. In 1951 he became a traffic costing officer and in 1955 was transferred to the secretariat of the area management costs and statistics panel at the B.T.C., becoming its secretary in 1957. His last appointment dated from March, 1958.

\* \* \*

Two Western Region occasions: left, Admiral Sir Charles Lambe, First Sea Lord, unveils the nameplate "The Royal Naval Reserve, 1859-1959" on diesel-hydraulic locomotive D.812 at Paddington—on the left are Mr. K. W. C. Grand, Sir Brian Robertson and Mr. R. F. Hanks. On the right is Mr. Ernest Marples at Old Oak Common hostel and canteen. With him (l. to r.) are Messrs. S. R. Lewis, Mrs. Fry, Sir Brian Robertson, C. W. Powell, J. R. Hammond, S. G. Ward and H. R. Chubb



Mr. J. Calderwood



Mr. A. P. Quarrell

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The photograph, left, shows two 1,500 kW equipments. One of the two main transformers in the farther set is withdrawn to show its location.

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## IMPORTANT CONTRACTS

## New Indus Bridge

**C**OMPETITION from German, Austrian and American firms was beaten by Dorman Long (Bridge and Engineering), Limited, and Gammon Pakistan, Limited, which, working in association, have been awarded a £1,150,000 contract for the construction of a bridge at Sukkur, West Pakistan, over the Rohri Channel of the River Indus by the Government of Pakistan. The structure, which will replace the famous Lansdowne Bridge, is a spandrel-braced arch with a span of 807 ft. on massive concrete abutments. The bridge will carry a single-track railway, which will be set in a concrete deck for the use of road vehicles. The total weight of steelwork is approximately 3,300 tons.

## Scottish Region Contracts

The following contracts have been placed by the Scottish Region of British Railways:

James Campbell and Son (Building Contractors), Limited, Inverness, for diesel maintenance and fuelling facilities, Inverness.

Ransomes and Rapier, Limited, Ipswich, for one 8-ton fork truck for use at Glasgow goods depots.

Kinnear Moodie and Co., Limited, Glasgow, for earthworks, retaining wall, etc., at Airdrie, and reconstruction of bridge between Craigmorran and Helensburgh Central, in connection with Glasgow's suburban electrification.

## British Engines for Arctic Circle

An order for 120 vertical diesel engines, which are destined to spend a large part of their life within the Arctic Circle in temperatures as low as minus 20 deg. C., has just been received by Leyland Motors, Limited, from Finland. Placed by Oy Suomen Autoteollisuus A.B., the largest producer of commercial vehicles in Finland, the order calls for 125-h.p. Leyland O600 diesel engines for use as power units in Sisu trucks. Previous orders from this Finnish company have totalled more than 5,000 Leyland diesel engines.

## Tyre Test Plant for London Transport

London Transport has ordered a new type of tyre-test plant for installation at its Chiswick works from Heenan and Froude, Limited. Built to L.T.E. requirements, the machine will permit two tyres to be run in mutual contact instead of having the more usual arrangement of driving a single tyre in contact with a revolving drum. The new machine incorporates a Heenan electric dynamometer providing accurate measurement of power losses through tyres under test. It will be used principally for research into fuel consumption.

## More Turboprops for N.A.C.

The New Zealand National Airways Corporation is to buy four Dutch Fokker Friendship aircraft and one British Vickers Viscount 800, Sir Leonard Isitt, chairman of the corporation, announced last week. New Zealand has three Viscounts already in service on the main north-south route, bought as replacements for the corporation's fleet of DC3 aircraft. The latest orders form the second stage in the replacement programme. All the new aircraft are powered by Rolls-Royce Dart turboprop engines, the Friendships having altogether a 63 per cent British content.

## B.O.A.C. Reservations Equipment

British Overseas Airways Corporation is to take the first step next year towards the mechanisation of its world-wide reservations system. A contract has been signed with I.B.M. (U.K.), Limited, for the hire of equipment to be installed at the New York office in August and at Airways Terminal, London, two months later. This equipment will replace the present method of recording information required by reservations space control. It will convert signals tape into punched cards, which will comprise the essential reservations records and will replace hand-written charts. In addition to speeding up the handling of reservations business, this recording system will permit extra checking routines, obviate duplicate bookings and facilitate the production of essential statistics.

## Railway Bridges at Whitechapel

London Transport announces that work has started on the redecking of two double-track bridges which carry District and Metropolitan Line trains over the East London Line at Whitechapel Station. The two bridges, which have been in daily use since 1902, when District trains first ran through to East Ham and Upminster, are generally similar, each consisting of three main girders of 58 ft. skew span with decks of Hobson's troughing. The troughing, now heavily corroded, is to be replaced by new steel and concrete decks. By making use of an existing parallel single-track bridge, it has been possible to arrange for the two double-track bridges to be taken out of service in turn; work will go on day and night without interruption to the 530 trains running over the bridges daily or to the East London Line service below. The work is expected to take four months to complete. The contractor is the Cleveland Bridge and Engineering Co., Limited.

## TENDERS INVITED

**T**HE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacock House, Theobalds Road, London, W.C.1.

**December 4—Union of South Africa.**—Transvaal Tender Board for four buses with seats for eight or nine adults. Tenders to the Chairman, Transvaal Provincial Tender Board, P.O. Box 1040, Pretoria. (ESB/27506/59.)

**December 7—Pakistan.**—North Western Railway for 90 chilled cast-iron WHEELS and 1,920 steel TYRES. Photocopies of tender documents from Export Services Branch, B.O.T., price 1s. (ESB/27506/59.)

**December 10—India.**—Director-General of Supplies and Disposals for eight 30-d.h.p. wheeled DIESEL TRACTORS with road equipment and SPARES for two years. Tenders to the Director-General of Supplies and Disposals, Shahjahan Road, New Delhi. (ESB/27511/59.)

**December 16—Formosa.**—International Co-operation Administration for one lot of double-track AUTOMATIC BLOCK SIGNALS and spare parts. Photocopies of specifications from Export Services Branch, B.O.T., price 1s. (ESB/23746/59/ICA.)

**December 16—Vietnam.**—International Co-operation Administration for 11 VEHICLES (Invitation No. 818-23109) and two LORRIES (Invitation No. 821-23109), all with petrol engines and four-wheel drive. Tender documents from the Vietnamese Embassy, 17 Victoria Road, London, W.8, quoting invitation number.

**Export Opportunity—Dominican Republic.**—E. and G. Martínez (Santos Domingo) C. por A., Apartado 371, Calle 30 de Mayo No. 88, Ciudad Trujillo, has advised the British Embassy at Ciudad Trujillo that it is interested in obtaining the sole distribution for a United Kingdom make of petrol- and diesel-driven MOTOR VEHICLES (cars, vans, pick-ups and lorries). (ESB/26168/59.)

**Export Opportunity—Spain.**—Vicinay S.A. Particular de Segundo, Bilbao, Spain, has informed the British Consulate at Bilbao that it is interested in collaborating with United Kingdom firms for manufacturing locally under licence, ANCHORS, STAINLESS-STEEL PROPELLERS, PIPES and other cast-steel goods used in the shipbuilding industry. (ESB/26585/59.)

## SHIPPING and SHIPBUILDING

## Low Pay of Pilots

**M**ANY ports in the U.K. were treating pilots little better than deck hands, and the situation was thoroughly unsatisfactory, said Mr. C. D. Griffiths, secretary to the United Kingdom Pilots Association, in London. There had been some success in negotiations in small ports. The annual conference called for steps to be taken to secure increases "within a reasonable time."

## Report on Financing of Cunarders

**T**HE report of the Chandos Committee on the financial support which may be forthcoming from the Government for the replacement of the *Queen Mary* and the *Queen Elizabeth* should be made available to the Minister of Transport by about the end of February next year, it is stated.

## Arab League Shipping Company

**T**HE general secretariat of the Arab League states that it has completed work on the text of an agreement between League members which would result in the formation of an Arab shipping company. This agreement is first to be laid before the council of the League for assent and then passed to the individual governments of League members for signing. The League's Economic Council recommended the forming of such a company earlier this year. It is planned to have an initial capital of £E5,300,000.

## Air-Conditioning of "Himalaya"

**O**N her arrival at Tilbury on November 22, the P. and O. liner *Himalaya* was withdrawn from service until January, 1960, to be fully air-conditioned. As announced previously, the work will be undertaken by the Rotterdam Dry Dock Company. *Himalaya* will be the second of the P. and O. passenger liners to be fully air-conditioned. Refitting was completed on the 30,000-ton *Arcadia* in June of this year and similar work will be carried out at the Belfast yard of Harland and Wolff, Limited, on *Chusan*, 24,000 tons, from December, 1959, to March, 1960.

## Timber Trade through Boston

**U**NLESS there is more storage accommodation for timber the port of Boston will come to a standstill. A Ministry of Housing inquiry was told this at Boston on November 18, when Boston Corporation applied for the use of about 50 acres of land near the docks for industrial development. The Council had offered long leases to the timber importer May and Hassell, Limited, and to another manufacturer which wants to build a factory there to make articles from timber. Mr. G. Lorraine, Deputy Town Clerk, said timber was the largest single item of traffic at the docks.

## Greenock a Banana Port

**G**REENOCK is to be used for the import of bananas into Scotland following on a recent successful experiment. In this, a trial cargo of 1,400 tons was discharged and distributed by Elders and Fyffes, Limited; previously bananas were unloaded in England and delivered by road. Discussions have been proceeding for some time between the importers and Greenock Harbour Trust regarding dock facilities and these have now been arranged. A shed at the James Watt Dock has been made available and will be adapted for banana traffic. Six automatic conveyor units will be installed to give direct loading from the ship to the shed and some 12 to 18 cargoes are expected to be handled over the coming year. Rail traffic will take the fruit from Greenock throughout Scotland. The new traffic has been welcomed in Greenock where the loss of sugar handling as a result of transfer to bulk handling meant serious loss of work to dockers.

## FINANCIAL RESULTS

**N**OTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

## Seddon Diesel Vehicles

Seddon Diesel Vehicles, Limited, earned net profit of £36,775 (£12,975) after tax for the year ended June 30, 1959. Ordinary is 5 per cent (same).

## British Vacuum Cleaner and Engineering

The British Vacuum Cleaner and Engineering Co., Limited, is paying a half-yearly dividend on the 8½ per cent cumulative redeemable preference shares.

## Guy Motors

As in 1957-58, Guy Motors, Limited, is passing the ordinary dividend for the year ended July 31, 1959, in which there was a group loss of £232,164 (deficit £180,709). The main cause of the unsatisfactory results was the inability to achieve a sufficient volume of production of new models which had to be introduced at a time when many suppliers of components were having difficulty in meeting all demands made upon them. It is added that there is now increasing demand for products and the order book is satisfactory.

## Enfield Cables: S.T.C.

Enfield Rolling Mills, Limited, and Standard Telephones and Cables, Limited, announce that they have concluded negotiations for the merger of the power cable businesses carried on by Enfield Cables, Limited, and by Standard Telephones and Cables, Limited, respectively. It is proposed that a new company be formed which will be owned equally by Enfield Cables and Standard Telephones and Cables. The new company's operations will be restricted to power cables and will start on January 1, 1960.

## Associated Electrical Industries

Commenced about two years ago, the reorganisation of the Associated Electrical Industries group has been virtually completed as five new product divisions are formed. On January 1, 1960, British Thomson-Houston, Metropolitan-Vickers Electrical and Siemens Edison Swan change their names to Associated Electrical Industries (Rugby), Limited, Associated Electrical Industries (Manchester), Limited, and Associated Electrical Industries (Woolwich), Limited respectively. The five product divisions of Associated Electrical Industries are:

**Cable division and Construction division:** these combine the interests of the S.E.S. cables division with those of W. T. Henley's Telegraph Works Co., Limited and Liverpool Electric Cables, Limited.

**Telecommunications division and Radio and electronic components division:** the Telecommunications division has hitherto traded as a product division of Siemens Edison Swan, Limited.

**Instrumentation division:** this combines the interests of Sunvic Control, Limited, with the instrument and meter, X-ray, and scientific apparatus departments of Metropolitan-Vickers and will be managed by Associated Electrical Industries (Manchester), Limited.

Accordingly from January 1, 1960, the total of A.E.I. product divisions becomes 12. Birlec, Limited, the heat treatment and furnace manufacturing company, will be renamed A.E.I. Birlec, Limited, and will be managed by Associated Electrical Industries (Rugby), Limited. The new structure, says the chairman of A.E.I., Lord Chandos, is designed to meet intensified—and intensifying—competition and to give A.E.I. the advantages of being a unitary company that its main competitors have enjoyed. One effect of the organisation into product divisions will be to allow longer production runs and also permit specialists to concentrate upon their problems.

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TO DO...

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25 MINUTES  
TO DO  
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